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THE IN-DEPTH GUIDE FOR DIGITAL CREATIVES

EXPERT TIPS AND TECHNIQUES!

Total Guide Typography

Logos & Fonts

CUTTING-EDGE PIXEL FONTS

LOGOTYPE DESIGN FOR EVERYONE

PERFECT FONTS FOR THE WEB

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First steps through to pro results

THEORY OF TYPOGRAPHY
Essential rules for print and Web from industry experts

HOW TO MAKE MONEY FROM YOUR FONTS
Set up a foundry and sell fonts onlin

DESIGN GREAT ICONS!
Apple's icon designer reveals all

SEALED AND EXCLUSIVE!

THE INSIDE TRACK ON HOW TO WIN $5,000

- We talk to the judges and past
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Welcome

"Typography exists to honour content," said Robert Bringhurst in his *Elements of Typographic Style*. Or as type designer Nick Shinn put it rather more forthrightly: "In other words, read the frigging copy. And care about it."

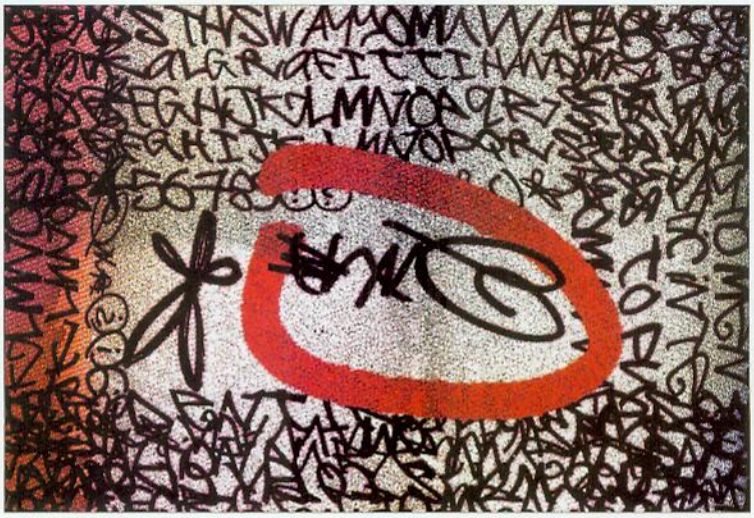
Typography is at once revered and feared among many designers. Revered, because a truly great font or use of typography can be magnificently beautiful; and feared because, well, graphic artists don't really *do* language. There's sometimes a faint presumption that typography is overly prissy and fussy and full of arcane rules that have little to do with creativity.

But typography, and the selection of the perfect font, is often at the heart of design and deserves as much consideration as the rest of your work. Why spend hours or days perfecting subtle colour details and then ruin your entire piece with a misguided font choice or screamingly poor punctuation?

In this issue, you'll discover how experts create, use and manipulate typography to often stunning effect. We'll show you how to create your own typeface for both print and the Web; how to turn simple fonts into stylish logos; when to use certain typography rules (and when not to); and, should you find you have a knack for it, how to make money from your fonts.

Tell us what topics you'd like to see covered in-depth in *Computer Arts Projects*. Contact us on **robert.carney@futurenet.co.uk**

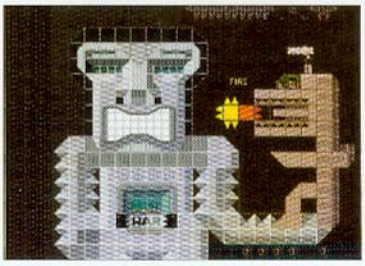
Contributing artists



Identikal

Founded by identical twins Adam and Nick Hayes, Identikal is the team behind the cult success of the Identikal Foundry. It has created some of the most exciting modern fonts of the century, used by *Time Out, Dazed and Confused, Wired* and many other publications.

[w] www.identikal.com



eBoy

eBoy actually comprises four slightly insane designers based in Berlin and New York. Specialising in pixel art and experimental projects such as their ever-expanding eCity, the lads are obsessed by video games and robots.

[w] www.eboy.com

Leslie Cabarga

Leslie has been an illustrator and designer since 1970, and has created many successful fonts such as Magneto, Streamline and Kobalt. His latest book is *Logo, Font & Lettering Bible*.

[w] flashfonts.com

We're always on the lookout for new artists as well as established creatives – so if you're interested in contributing to the magazine, please send some examples of your work to **[e] richard.llewellyn@futurenet.co.uk**

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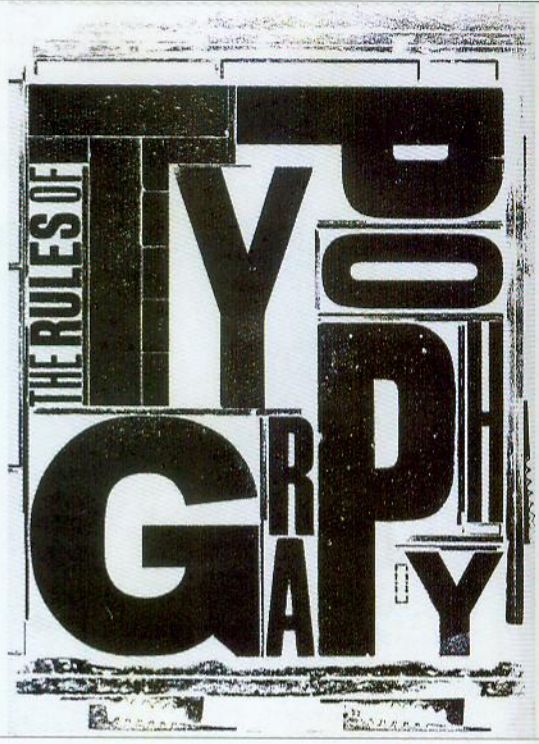

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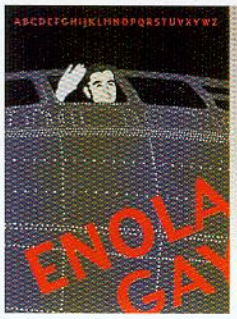
Left: Poster art from Max Kisman.

Below: Font design by Jonathan Barnbrook.



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TYPOGRAPHY AND LOGOS

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Use the full programs on our coverdisc to make your own personalised font based on your handwriting

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Create a distinctive display font that's ideal for use in illustrations and logos

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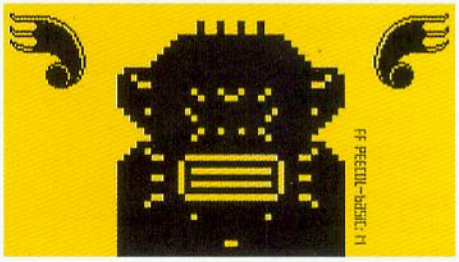
Web and HTML type design can now be as beautiful as its print cousin. Find out why, and how you can make the most of screen fonts



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Create fonts for every medium, design stunning logos, and discover how to keep your fonts perfect order

COMPUTER arts projects INTERACTIVE

On the CD

Your guide to the free extras given away on this issue's cover disc...

Software

PHOTOSHOP CS (Demo for PC/Mac)

Photoshop CS is the latest version of Adobe's industry-standard image editor, and part of the whole *Creative Suite*. Along with tighter integration with the other apps in the suite, *Photoshop CS* boasts a slew of new and improved features. These include an improved file browser, a Match Colour command, the Histogram palette, and layer comps.

With this demo you can try out this exciting new release for 30 days, and experience the power that professional graphic artists rely on every day.

[w] www.adobe.com

TRANSTYPE (Demo for PC/Mac)

TransType is a universal font convertor. In seconds, it enables you to convert any outline font to almost any other format on both Mac and PC. For example, you could transform a PC TrueType font on the PC into a standard PostScript Type 1 typeface on the Mac. Multiple master fonts are also supported, and there's optional autohinting to improve the look of converted fonts. For PC to Mac transitions, you can opt to create font suitcases and bitmap fonts for ease of reading.

[w] www.fontlab.com

FONTLAB (Demo for PC/Mac)

A full-featured digital typeface editor, *FontLab* is bursting with features to ease the creation of just about any font. Its Glyph Editor works with Type 1 and TrueType outlines, supports anti-aliased previews, and supports a wide range of drawing tools to suit your preferred creation style. It's simple to make multiple masters and add hinting to any format, together with font metrics and kerning.

[w] www.fontlab.com

Video tutorials

FOR PHOTOSHOP:

Layer Masking for Beginners
Sponge Tool for Beginners

FOR FONTLAB:

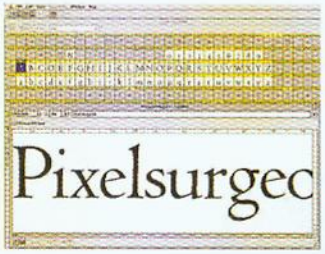
Using FontLab

These comprehensive tutorials will introduce you to the powerful features in both *Photoshop* and *FontLab*, demos of which you can also find on the disc.

[w] www.psXtras.com

TYPETOOL 1.3 FULL APP WORTH $99

Design your own fonts from scratch...



This month, we're delighted to be able to offer two full *FontLab* apps for creating and manipulating fonts. The first of these, *TypeTool 1.3*, is a kind of cut-down version of the incredibly popular *FontLab* (a demo of which you'll also find on the disc).

The program enables you to create a new font or modify an existing one with easy-to-use yet powerful editing tools. Great features include outline editors with more than ten tools and a 200-level undo/redo function. You can import and export fonts in TrueType and PostScript Type 1 formats, too, while a metric and kerning editing module provides customisable auto-spacing and auto-kerning features.

In addition, you can import and export font metric files in PFM and AFM formats, as well as import metrics from Mac font suitcases. Add to this an extremely easy-to-navigate interface with drag-and-drop functionality and pop-up menus and you have a truly awesome font-creation application at your disposal. Better still, you're getting it for free! See below for details on how to obtain your serial number.

How to obtain your serial number

TypeTool 1.3 will run in demo mode until you enter your serial number. To obtain this, simply register your details at: www.fontlab.com/promo/futurepub.html

SCANFONT 3.2 FULL APP WORTH $99

Turn any image into your own font!

Ever see a logo, old typeface in a book or image/dingbat that you wish you could use as a font? Don't have the time to scan it in and trace it by hand? Well, our second free typography tool from *FontLab* is the answer! *ScanFont 3.2* enables you to create a professional looking technically correct digital font in minutes.

ScanFont 3.2 combines traditional font-editing functionality with precise auto-tracing tools. The latter have been specially developed to work with characters so you can transform anything you can print on paper or see on your computer screen into high-quality TrueType or PostScript fonts.

Features include a high-quality fully customisable auto-tracing algorithm (specially designed to handle characters), integrated bitmap editor with more than 20 tools, automatic detection of characters and strings in a source image, support for most scanners through TWAIN interface, the ability to export individual characters in EPS format, and an easy-to-use drag-and-drop interface. See below for details on how to obtain your serial number.

How to obtain your serial number

ScanFont 3.2 will run in demo mode until you enter your serial number. To get this, register your details at the following Website: www.fontlab.com/promo/futurepub.html

FREE FONTS — WORTH $3400!

110 fonts

MYFONTS.COM (Mac/PC)

MyFonts.com, the US-based home for around 35,000 quality fonts to buy online, represents the work of over 150 foundries, or font-makers, all available for immediate download at remarkably low prices. On this issue's CD you'll find the *Computer Arts Projects* Spring 2004 collection — all available for your immediate use, with no further cost.

Each participating foundry has included one or two of its fonts on this CD, a total of 110 fonts worth around $3400 that you very likely won't have seen before. These are full commercial versions, which normally sell at prices from around US$15 to $50.

Licences

The fonts included on the CD are not freeware. They are commercial products licensed only to you under the terms of the respective Licence Agreements.

Please note that your use of any font constitutes agreement with the applicable licence. Prior to installing a font from a folder representing a foundry, please read the Licence Agreement in that folder. If you don't agree with the terms of the licence, please do not use the fonts and ensure that you do not retain any copies of them on your computer.

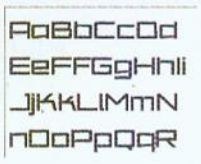
The foundries have made a generous deal offering a 50 per cent discount (see below), so please do not distribute these fonts online — as we've said, they are not freeware, rather licensed commercial fonts.

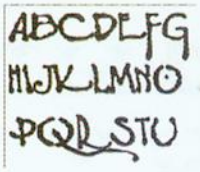
Installation

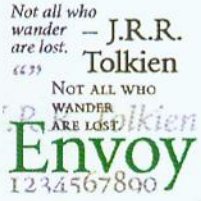
All fonts on the CD are grouped into folders by each participating foundry. Please read the respective Licence Agreements prior to installing any fonts. Installation instructions for Macintosh and for Windows are available online.

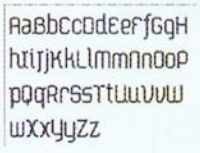
What's That Font?

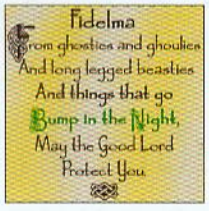
We've been impressed with one particular feature at MyFonts. It's called WhatTheFont. It's an immediate, online font identifier. Upload a GIF or JPEG, and it'll tell you the font. Sounds incredible, but it almost always chooses the right font. Visit [w] www.myfonts.com/WhatTheFont to try it out.











Buy more fonts at 50% discount!

With the *Computer Arts Projects* 50 per cent discount, each foundry with fonts on the CD has also agreed to cut the prices of their fonts. No strings, just buy the fonts within 60 days of this issue's on-sale date (1 April 2004) for half price. This is a unique chance to try out fonts from foundries you've not thought of using before, at prices that were low before the discount thanks to the weak dollar. Use the Gift Certificate code CA2004CD or simply visit [w] www.myfonts.com/Promotion?egccode=CA2004CD

Our experts bring you 30 professional guidelines for creating better typography...

These days, an artist has to wear many hats. In the course of a day, you might develop a Flash intro for a Website, design a poster for an arts festival, go to lunch with a client, then turn around and struggle with a cranky laser printer all afternoon. With so much work to do, sometimes it's easy to forget the basics. And quality typography, one of the essential building blocks of communications, is all too often the first thing to go. But if the type's not right, the work will suffer – and that's not good for anyone.

For this feature, we've asked a group of type designers and typographers for their favourite typographical tips. This panel of experts agrees that, while creative rules were made to be broken, the basic 'rules' of good typography should never be ignored.

Tamye Riggs is a freelance graphic designer, writer, editor, and typographer located on the West Coast of the United States. She is the co-editor of four books on typography and motion graphics. Read more at her pet project, **[w]** www.typelife.com.

Jim Lyles has worked in the type business since 1980, when he first learned type design at Mergenthaler Linotype in New York. He moved to Bitstream in 1985, where he's now Director of Typographic Development. **[w]** www.bitstream.com

Sue Zafarana is Director of Custom Type Production at Bitstream Inc. She began her career in type when she joined Compugraphic (Agfa) in 1977, where she took part in the development of their phototype library. She then assisted in the conversion to digital data in the early 1980s and joined Bitstream in 1984.

Illustration by Alan Kitching

1 Hyphenation consternation

Hyphens are fine for compound words, but they don't belong at the end of a line of type. Do what you can to keep hyphenation to a minimum. Manually break lines, subtly adjust horizontal spacing, or slightly edit text to eliminate unwanted hyphens. The occasional hyphenated line-break is unavoidable, but don't have hyphens at the end of more than two consecutive lines. There should always be two or more characters before a hyphenated line ending, and at least three characters of the broken word at the beginning of the next line. Never let the second half of a hyphenated word, or a word with less than four characters, sit alone on the last line of a paragraph.

Tamye Riggs, Society of Typographic Aficionados
[w] www.typesociety.org; www.typelife.com

2 Hang that punctuation!

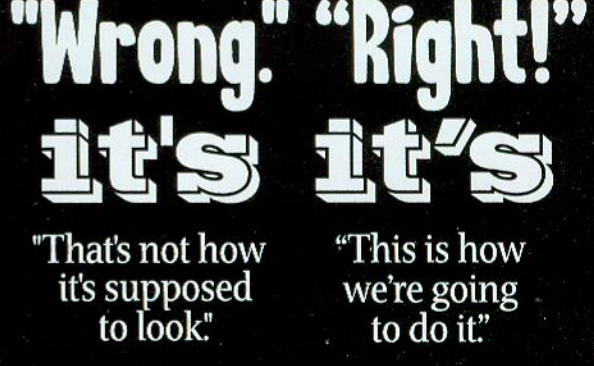
The most beautiful typography uses hanging punctuation. Beginning and ending quotes, line-end hyphens, periods, and ellipses should be hung in the margin for flush left and justified text setting to avoid 'holes' in the text. *InDesign* and Macromedia *FreeHand* both have preferences for this, but in *QuarkXPress*, you'll have to manually set a non-breaking space before the beginning quote, and add negative tracking between the non-breaking space and the beginning quote to achieve the effect.

Brian Sooy, Brian Sooy & Co.
[w] www.briansooyco.com

3 Apostrophes revisited

Did you know every font contains the ASCII apostrophe (or 'prime mark') to the right of the semicolon, as well as the 'hidden' typographer's apostrophe? Proper typographic use requires the typographer's version, accessed on the Macintosh by typing Option-Shift-], and on the PC by typing Alt-0146. To automate this substitution, set your layout application preferences to use smart quotes (*QuarkXPress*) or typographer's quotes (Adobe *InDesign*). Typing ’ will display the typographer's apostrophe in HTML.

Brian Sooy, Brian Sooy & Co.
[w] www.briansooyco.com



False quotes appear above, with true typographer's punctuation on the right. Top: Whiskers AOE, Astigmatic One Eye, Brian J. Bonislawsky, designer. Middle: Vineta, Bitstream, Ernst Volker, designer. Bottom: STF Veritas, Altered Ego Fonts, Brian Sooy, designer.

4 A river runs through it

When setting justified body copy, you'll sometimes end up with strange word spacing. This can create the appearance of 'rivers' running through your text. If the line length (also called measure) is short, set the text flush left/ragged right. If you have room for a wider measure, and you really must have your text justified, remember this rule of thumb: the line length in picas for justified text should be about twice the point size of the type. If your font size is 10 point, your line length should be around 20 picas.

James Grieshaber, Typeco
[w] www.typeco.com

5 Mind your ems and ens

Fonts usually have three dashes in their character set: the hyphen, the en dash, and the em dash. The hyphen (short) is used to connect the pieces of compound words, or to divide words that break at line endings. An en dash (medium) is used to indicate a range of dates, page numbers, or other values. The em dash (long) is used to indicate an abrupt change in thought, or to set off a separate idea within a sentence, and so on. If an em dash in a typeface looks too wide, use an en dash instead. You may add a tiny bit of space before and after an em or en dash if you like. And — most importantly — never use two hyphens in place of an em or en dash!

Tamye Riggs, Society of Typographic Aficionados
[w] www.typesociety.org; www.typelife.com

HYPHEN

EN DASH

EM DASH

6 Reversing roles

Type that prints fine in black on white is often illegible when reversed to white on black. It's surprising how often one sees, even in well-designed publications, a box or pull-quote where the type is knocked out of a dark colour and breaks down. If the text type is used in reverse, it should at least be made bigger or, preferably, set in bold, or in a sans serif.

Matthew Carter, Carter & Cone

7 To justify, or not to justify?

There are two schools of thought regarding the justification or non-justification of body copy. Some say text set with a ragged right margin interrupts the flow of reading. Others insist that the horizontal spacing problems and excessive hyphenation that often result from justifying text are far more distracting than a ragged right margin. Expert typographer Robert Bringhurst suggests this compromise in *The Elements of Typographic Style*: "Set ragged if ragged setting suits the text and the page." In other words, you can use your judgment on the aesthetics of the ragged versus justified issue — as long as you make it easy to read the text.

Tamye Riggs, Society of Typographic Aficionados
[w] www.typesociety.org; www.typelife.com

8 Less is more, more or less

Today's designers have access to a wealth of unique display fonts. The impulse when you get a new font (or any cool new thing, for that matter) is to use it as much as possible. This may be good in some instances, but judicious use and careful selection of type will really make a difference in your work. If you've got a very ornate display font, use it for headlines or drop caps. Using 'busy' type designs for large blocks of text can interfere with readability, and usually doesn't look terribly attractive. Pair up complementary fonts, and limit the number of fonts used on one page — the results will be cleaner and more visually appealing.

Richard Kegler, P22 type foundry
[w] www.p22.com

The f's terminal and the i's dot are apt to bump awkwardly. *The single character solution has design integrity.* *The f–l pairing is too heavy up top, too empty inside.* *Its ligature is attractive in its own right.*

9 The luxury of ligatures

The 'f' ligatures are designed for discretion, to replace ungainly couplings with smooth, composite characters. Conversely, there are ligatures that add noticeable affectation to text. Another class of ligatures is for tight layouts — providing flexibility with letter combinations of alternate width, or minimising the white space between characters. The fi (Option-Shift 5) and fl (Option-Shift 6) are included in many fonts (Mac, not PC), but the location of extra ligatures varies, being either:

- on the base fonts (replacing obscure maths symbols)
- on an expert font
- nowhere; many faces have only one expert font, with small caps/old-style figures, but no extra ligatures.

Nick Shinn, Shinn Type Foundry
[w] www.shinntype.com

10 The ups and downs of caps

Drop caps and elevated caps should have the text that follows fitted nicely. Traditionally, the first word or phrase after the drop cap is set in caps or small caps, to provide a transition zone that eases the reader into the text.

Nick Shinn, Shinn Type Foundry
[w] www.shinntype.com

"JUDICIOUS USE AND CAREFUL SELECTION OF TYPE WILL REALLY MAKE A DIFFERENCE IN YOUR WORK"
RICHARD KEGLER

WE'RE given no choice but to drown in our sorrows. If I had half a chance, I would die for to leave. For nine days, I floated through the Florida straits. My four days of water

Drop caps are a great opportunity for typographers to practise their craft. It's fun to experiment with letters such as T, V, W, and Y, hanging the left arm into the margin — and this can give an edge to an otherwise rigid page layout. Cap set in Zapf Chancery Italic, Hermann Zapf, designer. Text set in URW Antiqua.

AND THE DAILY REFRAIN. Oh, Lord, please stop my hunger, shelter me from the rain. On the island of pain, we forsake our tomorrows.

Fitted drop caps are especially important when the first letter is A or I, because the reader may otherwise wonder whether the initial letter is itself a word. Cap set in Goudy Handtooled, Frederic W. Goudy, designer.

FREEDOM AWAITS THOSE who share in the pain, of a life without hope, and the daily refrain. Oh, Lord, please stop my hunger, shelter me from the rain.

The initial cap can be set in a different typeface from the text, or the same – but if it's a serif typeface, a display version should be used for the large cap, not just the text font at a larger size. Cap set in Goudy Handtooled, Frederic W. Goudy, designer.

BEEN GONE THE LAST FIVE. I have danced with the sharks—oh, but I'm still alive. A Cuban armada on the straits of freedom. A fleet full of souls on a sea full of dreams. We pray to

The top of the drop cap should line up with the top of the following text. Cap set in URW Grotesk.

"NEVER SET A SCRIPT TYPEFACE IN ALL CAPS... IT MAKES YOUR WORK LOOK LESS THAN AMATEURISH" **STUART SANDLER**

11 Straight shooting with bullets

Typographic bullets are simply round dots. They can be solid or just an outline, and come in two standard sizes: em bullets (which are almost as big as capital letters) and en bullets (which are about half the size of em bullets). When typeset, both varieties are centred vertically on the height of the capital letters.

BELOW ARE SOME RULES OF THUMB ON HOW TO USE BULLETS...

EM BULLETS:

- are almost always too big
- SHOULD BE LIMITED TO USE WITH CAP LETTERS
- should be set in outline form for minimum text disruption

EN BULLETS:

- Should centre on cap height when they begin a line
- should centre on lowercase x-height when used with lowercase text

EN BULLETS CAN BE SET EVEN SMALLER WHEN:

- less emphasis is required
- very many or very few bullets are used
- they're used with a typeface that has a small x-height
- they're used with a condensed typeface

Allan Haley, Agfa Monotype
[w] www.fonts.com

12 Cascading Style Sheets unmasked

You can achieve consistent on-screen type for any Website by creating a style sheet with three basic styles: body, p and td. Assign the same font style and size to all three styles, and all type elements on your page will be the same size. Be certain to set your size in pixels (for example, 12px) since all other formats are relative (10px is the minimum size you can use for all browsers). The result will be similar-looking pages on any browser and platform.

13 Basics of letter fitting

The most difficult part of spacing a typeface is finding the right visual balance, or 'colour'. A good fit depends on the stroke weight and body width of the typeface, and at some point, it can be very subjective. But there are some basic rules to get you in the ballpark:

- Generally, the heavier the stroke weight and the narrower the width, the tighter the fit.
- Square character shapes require more fit; round shapes require less.
- Italics usually fit tighter than their roman counterparts.
- Display designs are usually fit tighter.

14 Optical illusions

Much of good typography is about how things look. Optical alignment is usually more important than mathematical accuracy.

- Sometimes line spacing in headlines containing three or more lines must be adjusted to look even
- Left-aligned headlines beginning with round or diagonal letters should overhang the margin
- Align photos and graphics with the x-heights of text in adjacent columns, not the cap height
- Punctuation in headlines almost always looks too large. Reduce it a point or two to make things look right

Allan Haley, Agfa Monotype
[w] www.fonts.com

15 Be nice to your fonts

Never set a script typeface in all caps. It looks horrible, it was never intended to be set that way, and it makes your work look less than amateurish. And don't play the Marquis de Sade with your fonts. Don't put them on the stretcher and stretch them taller or pull them wider. Instead, find an appropriate weight of a font to use that was designed and drawn with the proportions you need.

Stuart Sandler, Font Diner
[w] www.fontdiner.com

Cézanne Cézanne likes this.

Examples set in P22 Cézanne, copyright 1996 Philadelphia Museum of Art.

16 Figuratively speaking

The size of a font's figures (numbers) can sometimes cause visual problems. Lining figures, which are typically the same height as the capital letters, look fine in an all-caps text setting or in headlines. But in a block of lowercase text, these 'uppercase' numbers look ungainly and overpower the neighbouring letterforms. Elegant and readable text setting demands the use of old style figures. Conversely, 'lowercase' figures shouldn't be stuck in the middle of a line of caps. The problem? The basic character set of most digital typefaces offers lining figures only.

WINTER 2002
Winter 2002
WINTER 2002
RIGHT

WINTER 2002
Winter 2002
WINTER 2002
WRONG

Examples set in Century Oldstyle, Kingsley/ATF, Linn Boyd Benton and Morris Fuller Benton, designers.

When working with figures, look for typefaces that feature expert sets – extra fonts matching the design of the base fonts – which typically feature old style figures, as well as ligatures, ornaments, swashes, true fractions and other typographic treasures.
Tamye Riggs, Society of Typographic Aficionados
[w] www.typesociety.org; www.typelife.com

17 Fun with alternate characters

There are many display fonts that include not only full international character sets, but also feature alternate characters to allow for occasional substitutions. The examples below demonstrate cases where alternates are desirable.

Starting at the top, P22's John Cage font presents alternates of each letter in the upper and lowercase positions. These allow for a more natural hand lettered look – especially when several letters repeat themselves.

P22 Cézanne offers alternates for some of the more decorative characters (such as the 't' and the 'd'). When t's are used more than once in a word, they overlap with other tall ascender letters, and the appearance of the word becomes cluttered. Using alternates makes the simulated handwriting appear more pleasing and natural.

P22 Arts and Crafts has built-in ligatures and alternates that allow for decorative Mission-style lettering effects. It takes time to find the best combination, but the results are worth it.
Richard Kegler, P22 type foundry
[w] www.p22.com

"GOOD SPACING IS ONE OF THOSE INVISIBLE SUCCESSES; ONLY POOR FITTING WILL BE NOTICED"

EVERYTHING
EVERYTHING
attitude
attitude
LLOYD
LLOYD

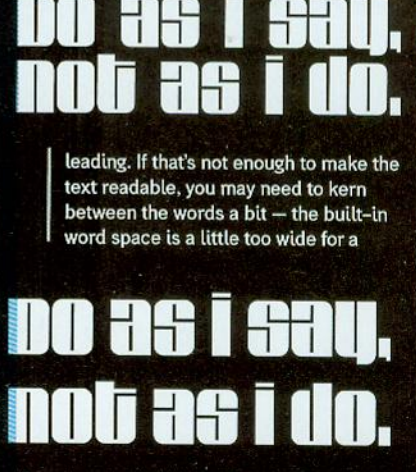
'Everything' set in P22 John Cage, produced by P22 for The Museum of Contemporary Art, Los Angeles, in cooperation with The John Cage Trust. 'Attitude' set in P22 Cézanne. 'Lloyd' set in P22 Arts and Crafts.

18 Word space versus line

Don't make the word space larger than your line spacing! It happens in headlines and body copy, and it makes reading difficult. It's a pretty basic rule, but you still see it happen all the time.

When your word spacing is larger than the line spacing (leading) in a stacked headline, the gaps tend to break up the words visually in ways the phrase was not intended to be read. In this example, the eye wants to group together the words "Say I Do".

To solve the problem, add a bit of leading. If that's not enough to make the text readable, you may need to kern between the words a bit – the built-in word space is a little too wide for a headline setting.
James Grieshaber, Typeco
[w] www.typeco.com



Examples set in Glyphic Neue, Typeco, James Grieshaber, designer.

19 Invisible success (Fit Theory)

When it comes to completing a successful type design, nothing can reduce the chances of that happening more than a poorly fitted font. The most finely rendered shapes will be for naught if the characters do not interact well and predictably with one another. Good spacing is another one of those invisible successes; only poor fitting will be noticed.

20 Letter fit, then kern: order is important

The order of these tasks is crucial to a successful typeface. First, establish an appropriate letter fit, apply it to the entire font, and then finally, kern specific character pairs to fix what letter fit cannot address. If you find yourself kerning standard character combinations such as bo, no and the like, then chances are you didn't get the letter fit right. In that case, stop kerning and revisit the letter spacing.

21 Spacing typeface families

When developing a family of several weights, you should endeavour to determine the control character fits of all the family members at the same time; this way, fits for the entire family will be consistent with one another and the family will work well together. The letter fit of bold weight, for instance, should be tighter than roman.

22 Extreme move rule

When establishing spacing and kerning, if you find you can't decide one way or another (tighter or looser), make an extreme move, such as fitting the characters really close. Then back it off.

23 The layered look

Some interesting typography can be achieved with layered type. For example, combine ShinnType's Bodoni Egyptian Shadow (black) with the Bold variant (white) to achieve a multi-coloured effect:

USING ADOBE *ILLUSTRATOR*:

1. Set text in Bold font in white.
2. Copy.
3. Paste in Front.
4. Click on Shadow and Black to change the type you have just pasted.
5. Select both texts, and group, for subsequent ease of use.

USING *QUARKXPRESS*:

1. Set text in Bold font in white.
2. Step and Repeat with zero offset.
3. Click on Shadow and Black to complete the effect.
4. Select both text boxes, and group, for subsequent ease of use.

ADVANCED:

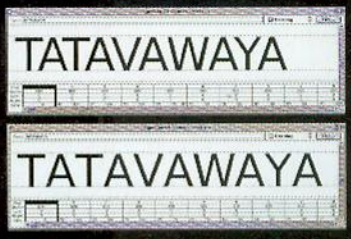
1. Tighten up the tracking.
2. Position the Fill font in front, to cover up the overlaps in the Shadow font. The amount of the outline left showing depends on the typeface. Here, the outline is thinned, because the Bold and Shadow fonts in Bodoni Egyptian are designed to trap.

Nick Shinn, Shinn Type Foundry
[w] www.shinntype.com
Examples set in Bodoni Egyptian, ShinnType, Nick Shinn, designer.

"WHEN SELECTING A WORD TO ITALICISE, BE SURE TO SELECT THE SPACE IMMEDIATELY BEFORE THE WORD TOO"
ALLAN HALEY

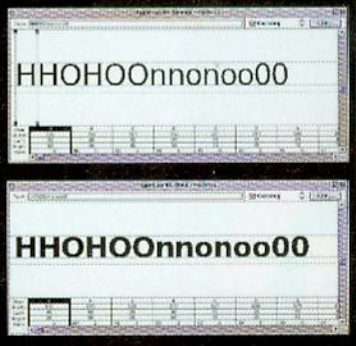
24 Kerning symmetrical characters

Character pairs consisting of symmetrically designed characters should have the same kern values on left and right. For example, OTO, OVO.



25 Spacing fundamentals

The fit, or the space between any two characters, is the sum total of the right sidebearing of the first character and the left sidebearing of the second character. Their fits differ by virtue of their basic designs: the straight characters require the most space around them, while the curved characters require less space because the curve stroke occupies less of the surrounding negative space. Depending on the design, the flatter a curve stroke is, the closer the sidebearing should approach that of the straight stroke.



26 Control string

The theory behind control characters is to use a small subset of characters to establish fits. The control characters possess the typical features and spacing combinations of the majority of the typographic set: HDHHOHOOhnnonoopo00

The typical order for widest to narrowest fit is: HH, nn, OO, 00 and oo. Although they may not be directly related by shape, the fits of almost all of the other characters are determined in some way by the spacing relationships of the control characters.

27 Basic kerning rule

It's critical to remember the difference between spacing and kerning. Spacing creates the rhythm between the black and white of the characters – the balance that allows the font to read properly. Kerning fixes what general spacing cannot do, by allowing you to improve the spacing between specific character combinations.

28 Kerning: Using words

The best way to assess kerning is by using words, as opposed to random letters. The location of a word (that is, in a heading or body text) will help you decide if kerning is too tight or too open.

29 Seasoning the mix

True small caps are not merely scaled-down versions of full caps. They differ in weight, fit, and proportion, being designed to match the colour (tone) of the lowercase. Putting passages of text in small caps is pointless: no matter how artful the setting, people will not be bothered to read it. The real value of small caps lies in their ability to ADD A DASH OF VARIETY to complex settings, while maintaining the aesthetic convenience of a single typeface family.

Nick Shinn, Shinn Type Foundry
[w] www.shinntype.com

30 Use italics for accents

Italic fonts can be mixed with almost any other typeface. Try it; *it really works!* An italic design from a serif font can even be combined as a headline with a sans serif text font to create an exceptionally striking contrast. Italic fonts slant to the right, and are typically spaced tighter than their roman counterparts. When selecting a word to italicise, be sure you also select the space immediately before the word. This will help reduce excessive gaps between italicised and roman words; use manual kerning between these words as needed to even out the space.

Allan Haley, Agfa Monotype
[w] www.fonts.com

ca-p

Creating your own handwritten font

Using the trial programs *ScanFont* and *TypeTool* available on this month's cover CD, we show you how to create a typeface using your own handwriting...

The key to creating your own handwritten-style font is simplicity and originality. Everyone has their own unique typeface reflected in their handwriting, so we've all got a natural head start when it comes to originality.

As for simplicity, we'll take you step by step through the process of turning your handwriting into a working font. We'll show you how to scan and space out each individual letter, how to import it into your computer and get creative with it.

We'll also show you the best ways to get the right shapes and original forms from your handwriting. Using *ScanFont*, you can arrange your font so that it's ready to import into *TypeTool*. You'll end up with your own unique typeface with which to sign your masterpieces and use to create your own illustrations.

Expertise provided by the Identikal Foundry, which has been producing fonts for over five years. Its library of over 450 typefaces is distributed all over the world. This year will see the launch of a new Website, identikalshop.com, which will house their full collection of fonts. It will include special offers found only on the site and will have sections devoted to new releases. Contact [e] info@ identikal.com or visit [w] www.identikal.com

On this month's cover CD you'll find copies of *ScanFont* and *TypeTool*, the programs used throughout this tutorial.

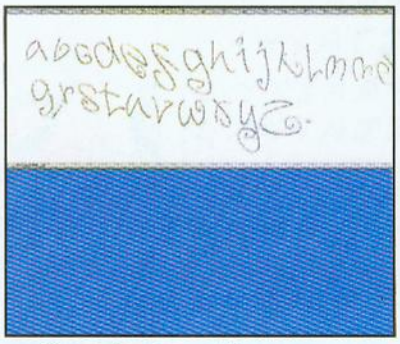
Part 1: Sketching your font

In the first part of this tutorial, we show you how to set up the right environment for drawing your font, and how to prepare it for digitisation...

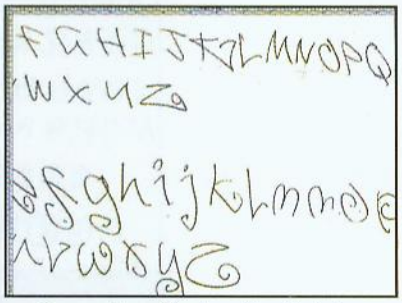
Keep it simple

The more complicated you make your letters, the harder it'll be to scan them and separate each individual glyph. The less-detailed they are, the easier it is to import them into *ScanFont*. Try to avoid using joined-up letters, because these can really be a pain when splitting up your glyphs for export.

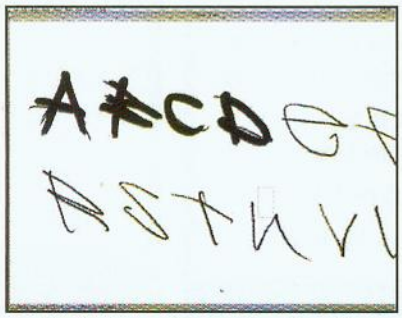
1 Start work on your typeface by drawing straight lines across a blank sheet of A4 paper. Try using a soft pencil for this (2B), because you may need to rub out these marks later on.



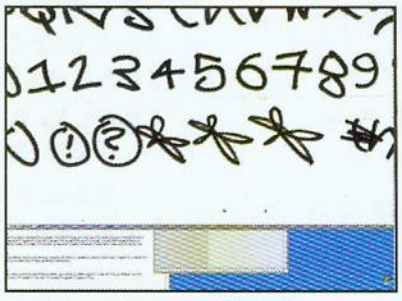
2 Once you've got enough lines on your paper, start writing the alphabet down in your natural handwriting style. You might choose to use a pencil for this, but here we've used a black marker pen.



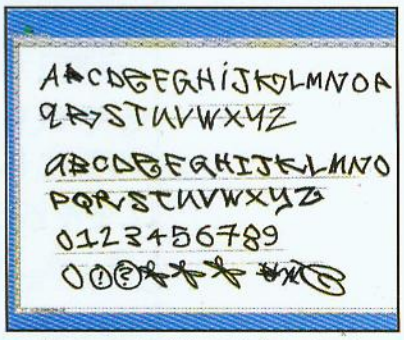
3 Once you've written down the alphabet, you might find that some of the characters don't look good enough. Write the alphabet again (or the letters that look bad) until you get each letter right. Do this as many times as necessary until you feel you have perfected the whole set.



4 If you've been using a pencil, you'll need to trace over all the shapes you like and intend to use. Make sure you use a solid marker pen for this. Because you'll be scanning in these letterforms, the darker they are at this stage the better they'll be once you've scanned them in.



5 When you've got your alphabet shapes in both uppercase and lowercase forms, you'll need to add some punctuation characters. It's entirely up to you how you wish to illustrate them. Here we've created circle and star shapes, because we'll be using this typeface for an illustration later on in the tutorial.



6 By now, you should have all of your characters on one sheet, together with your punctuation marks. You now have the core elements of your font. These will be used as the basis of your illustration, and will be digitised in the next stage.

Part 2: Scanning and importing your font

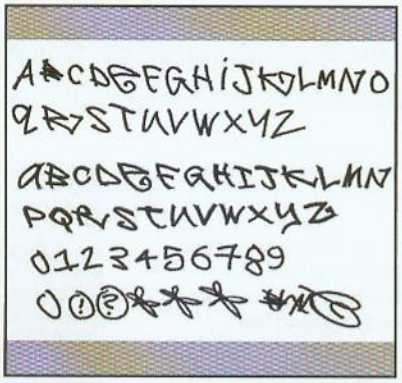
Now you've drawn up your font, you need to import it into *ScanFont* and make each individual glyph into an exportable EPS. Then you'll need to place them into a *TypeTool* file to make a PostScript font...

Contrast is key

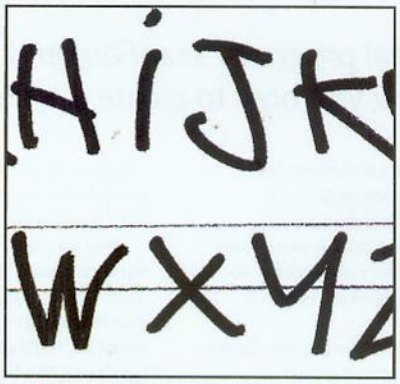
Always use a solid marker pen. The darker the letterform, the easier it is to clean up and create a working glyph out of it. You can use a pencil to sketch your letterforms at first, but make sure you trace over your sketches with a black marker before you scan them in.

Pixel programs rule

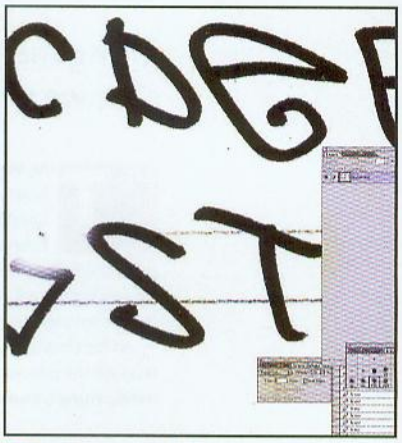
Use a pixel-based program when cleaning up each individual glyph. Try not to use *TypeTool* to draw complex shapes, because it can be a bit tricky if you're new to the program. You can easily import your glyphs into *ScanFont* by saving *Photoshop* files as bitmap TIFFs – this method will save time and effort.



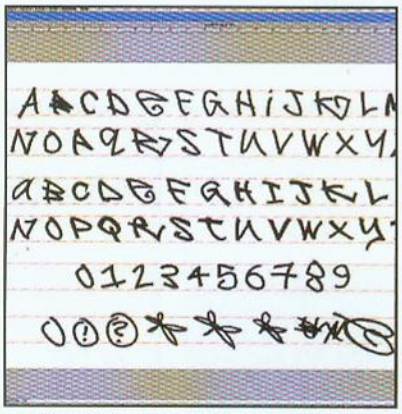
1 If you've been using a single sheet of paper to create your font, the scanning part of this tutorial should be easy. You can use *ScanFont* to import your sketches, but you may prefer to stick to what you know best. We've used *Photoshop* to scan in the letterforms. Scan in your sketches as 300dpi greyscale images.



2 Once you've scanned your shapes into *Photoshop*, you'll need to clean up your sketches before exporting the file into *ScanFont*. Use the Contrast and Brightness tool to bring out the individual shapes of your handwriting. You may notice that pencil marks and unwanted shapes have been picked up by the scan.

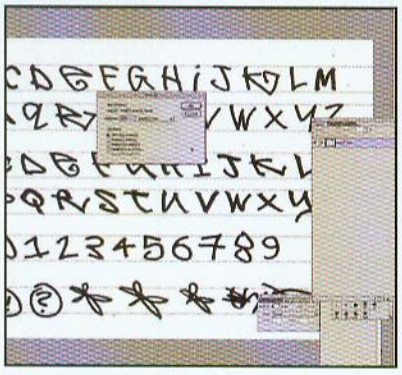


3 Use the Eraser tool in *Photoshop* to remove all of your unwanted pencil marks and shapes. At this stage, you need your image to be totally free of any unwanted blemishes.

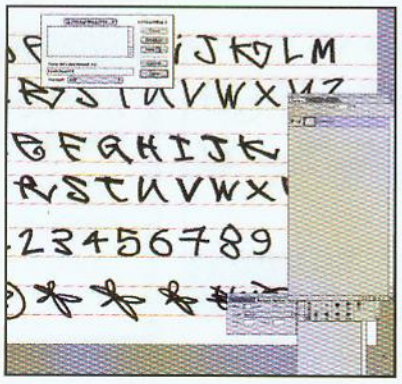


4 Once you've removed all of the unwanted marks, you need to make a grid so that all of your shapes can be spaced out to fit within it. Do this by using the guides in *Photoshop*.

5 Make sure that you can fit a square over each character, without any other letters entering the area. You need to make sure that you have the right amount of space around each letter before importing it.

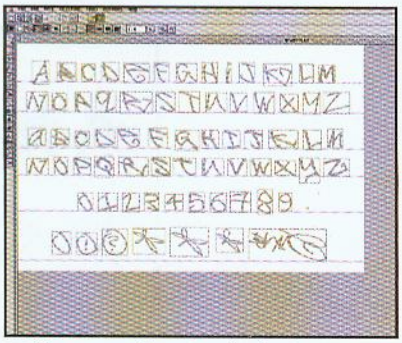


6 Once your letters have been spaced and cleaned, you need to export the image to use in *ScanFont*. As it reads only TIFFs and bitmaps, you need to change your file from a greyscale image into a bitmap. Do this in *Photoshop* by going to Image>Mode>Bitmap.



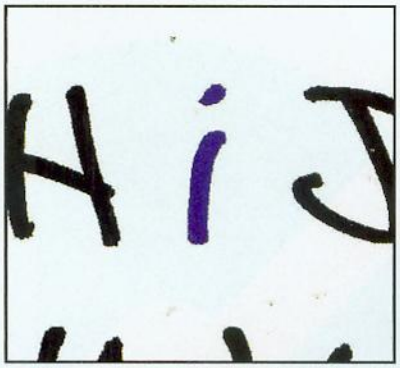
7 Now that your image is a bitmap, you need to save it as a TIFF so you can import it into *ScanFont*. Create a folder that you can add all of your work to once you've created your font.

8 Open *ScanFont*, and once it has loaded, choose to open a file. Choose your folder and the bitmap TIFF you have just created in *Photoshop*. The image should appear in a new file within the *ScanFont* setup.

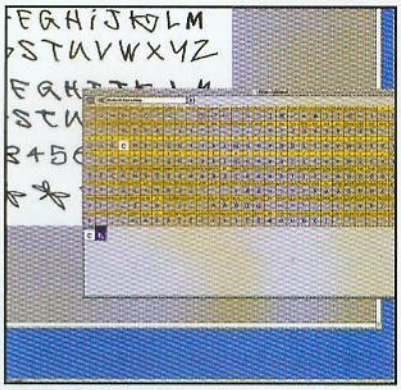


9 You now need to get used to the *ScanFont* environment, which has similar tools to *Photoshop*, so you should feel quite at home. *ScanFont* immediately recognises individual shapes once they've been imported, and the best way to view these is by selecting View>Split.

10 Now you need to collect each individual letter from your new *ScanFont* image so you can place it into *TypeTool* as a working font. Because *ScanFont* can export individual shapes once highlighted at the click of a button, you'll need to change the preferences to do so. Do this by selecting Tools>Preferences>Fontlab Server. The Fontlab Server enables you to use a custom server, so you can load glyphs straight into a font file like *TypeTool*.



11 Once you've selected *TypeTool* to load in each individual character, you'll need to choose the Magic Wand tool to highlight each letterform. Simply click with the Magic Wand on an area close to a letterform and it immediately highlights it. Once the shape is highlighted, you need to choose Operation>Place into Font. This automatically places the chosen shape into a *TypeTool* file.



12 As soon as you've got the hang of placing your letterforms into the *TypeTool* file, you need to do the same for all of the other individual letterforms, until all of them are in the type layout. You've now changed the characters of your handwriting into vector shapes, ready to be turned into a working PostScript font.

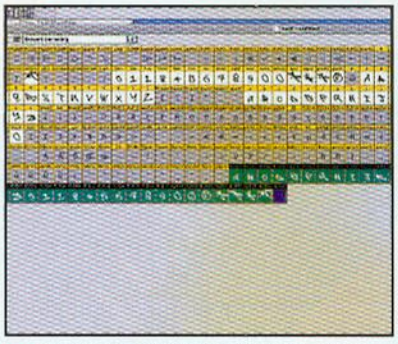
Part 3: Using your font in illustrations

Now that all of your characters have been placed in *TypeTool*, all you need to do is make them into a font that can be used in all your work...

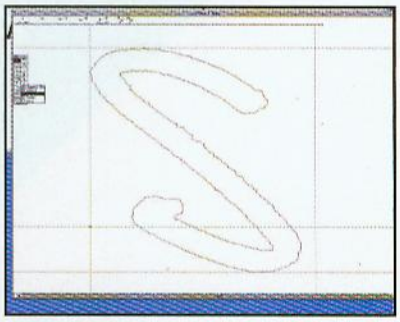
Adding texture

When applying texture to your handwriting font backgrounds, try to use high-res photographs of various textures that you can find on the street. Take photos of brick walls, pavements and even roads and use them to give your work an urban look. Sand is a great texture because it has the texture of a wall and also mimics aerosol spray-paint splashes perfectly.

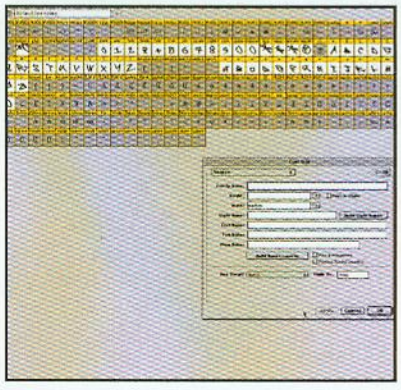
1 The first step in this final part of the tutorial is to place all of the characters you've imported into their rightful place within the *TypeTool* file. Do this by copying the character and pasting it into the chosen cell. *TypeTool* shows you where to place them, with a grey cell and the letterform inside. Once you've entered your shape into a cell, you can see it on a white background.



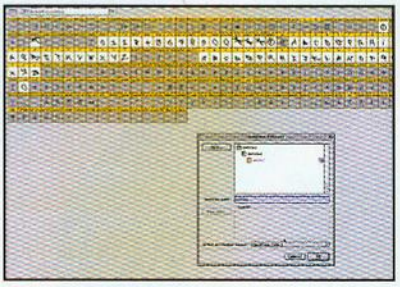
2 Repeat the previous step with the rest of the characters, until you have all the letterforms in the correct cells. Once you've completed this, you need to delete all the cells you originally imported.



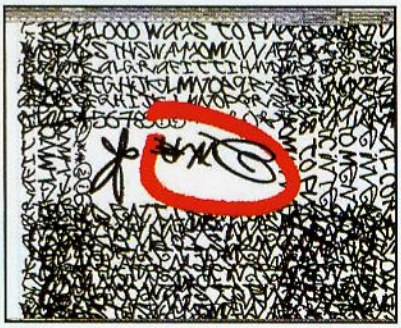
3 You might want to change the sizes of some of the characters within your font. You can do this by selecting the cell of the character and double-clicking. This will bring up an individual window of the character so you can work with it.



4 You now need to name your font for screen use, so that its name will appear in every application in which you wish to use it. Simply select File>Font Info, and decide on a naming convention for your font.



5 Produce a PostScript of the font. In this instance we've created a Mac PostScript – you'll need to give it a unique PostScript ID to enable your printer to read it. You'll also need to name the font. You may also want to produce bitmaps (although rarely used these days) by saving these files into a folder so you can use it. Do this by selecting File>Build Suitcase. Now you have the PostScript, put this into your font system and begin to use it in your desired vector program to produce illustrations.



6 For the final step, you need to make sure your new font is working properly. You may have noticed that the font is badly kerned or spaced (because you haven't yet worked on this). To combat this problem, simply tighten the kerning of the font so it appears joined up. Use your font as a device to add depth to your illustrations, or simply to write letters. CRP

Designing display fonts

Identikal shows you how to create a working display font which can be used for logos and illustrations...

Over the next five pages, we're going to take you through the motions of how to design, produce and use display fonts, with the help of Identikal's new typeface family Direckt. We start by outlining the basic steps you should use to get the shape of the characters right on paper, before transferring it all into digital data.

We then demonstrate how to create a full vectorised set of characters from your imported shapes in your desired vector program. This will enable you to correct any characters before they're imported into *Fontographer*. Once you've begun importing your glyphs into a font file, we'll also show you some tricks to help speed up the process ready for spacing and kerning. As with the new Direckt typeface, we reveal how spacing your font correctly will save you time on kerning, which can be very labour-intensive for beginners.

Finally, once you've fine-tuned your font and have exported it as a working PostScript file, we demonstrate how you can use it to create a logotype. This logo can be used alone or, as you can see on the opposite page, as part of your illustrations.

Expertise provided by the Identikal Foundry, which has been producing inspirational work for five years. Since the launch of its first Website back in 2000, which won respect from the design industry as well as creative press, it has been constantly creating new styles. 2004 sees the launch of a whole new Identikal Website, which concentrates on the work of the team rather than the gimmicks that Websites tend to include these days. This site will be launched in early April 2004. You can email Identikal at **[e]** info@identikal.com and see their work at **[w]** www.identikal.com

Part 1: The groundwork

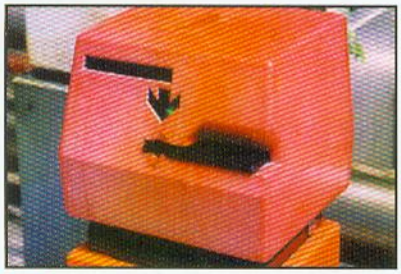
All Identikal fonts start off with a scribble or a moment of inspiration. The Direckt font is no exception...

Display fonts

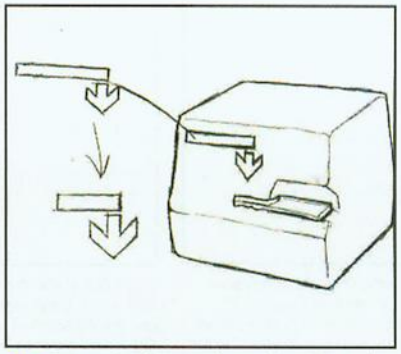
In the type industry, display fonts are specialist faces generally used no smaller than 20pt. This is due to the detail of each glyph, and also the readability at smaller sizes. Because display fonts tend to be more decorative than text typefaces, they are used for logotypes and typographical illustrations.

Gridded paper

A question that seems to come up all the time is: "Where do you start from when designing your fonts?" The simple reply from Identikal is: "We tend to use graph paper to accurately draw shapes that will be present throughout the whole typeface. We do this to really get a flow of our new font before importing it into the Mac."

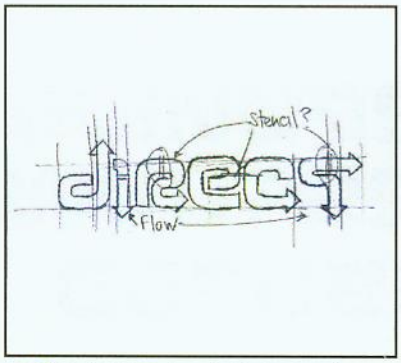


1 Back in late 2002, we took a trip to France and Benelux. The one thing that really stood out for us was the transport system's iconography and ticket punchers. We took photos of some of the punchers, and the arrow icon really stood out for us. For this project we'd like you to do the same. Go on a trip and really look for the little details in the environment around you. Take photographs or make sketches and be inspired by all that you see.

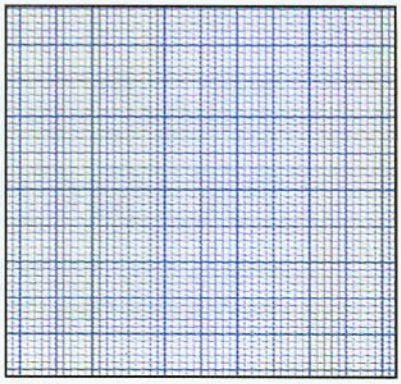


2 Once you've discovered something that really works for you, look at the shapes and forms of the object. Try to see the hidden details that can be taken for your own use, and sketch these shapes down onto a piece of paper.

3 Using your sketches of shapes, think of a word, or even work from a letter. Try to make your shapes into the letters of your word, and introduce new shapes if needed.



4 You should now have the beginnings of your letterforms. Try to streamline each glyph so that you get a flow and rhythm that works well. This helps define the characteristics of your font, and gives a sense of unity to all your letterforms.

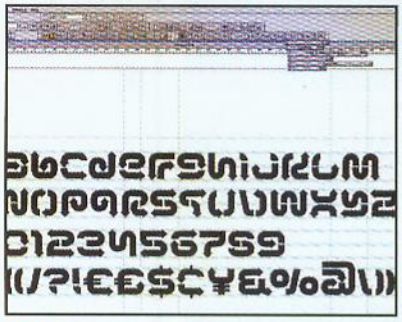


5 Once you're happy with your word, use a piece of graph paper to accurately work out the grid you'll use to construct each letter. This will be used as a background to drawing up your letterforms.

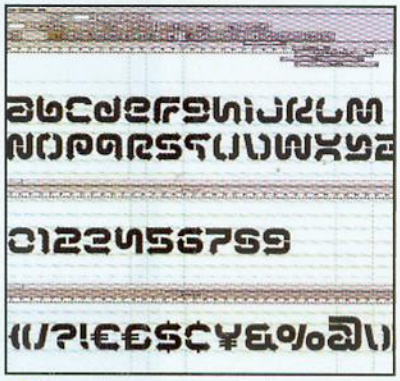
6 Once the grid is set, place some layout paper above the gridded paper. Draw each individual character onto your layout paper as accurately as you can. Once you've finished, you'll have the core elements to your font and will be ready to scan in your work for digitisation.

Extra characters

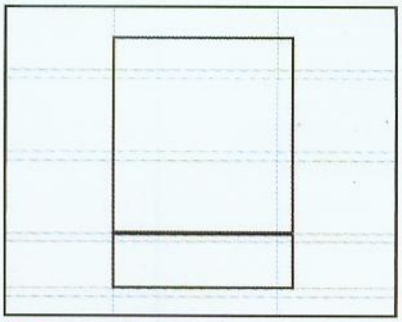
Unless you're going to distribute your font all over the world, you don't really have to create all the characters needed to make a full typeface set (over 220). For independent display fonts, we suggest keeping to a typeface set of around 120 characters.



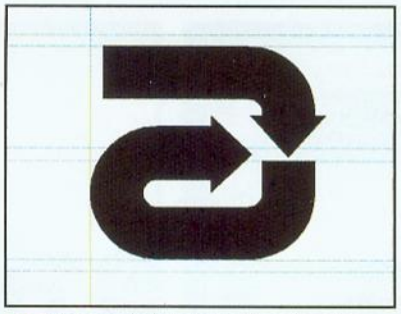
7 Once you've decided on the amount of characters you wish to produce, continue adding your characters to the set until you've completed them all. Note that if you're producing European accents, draw only the accent characters, not the letters. You should produce these once you've exported your glyphs into *Fontographer*.



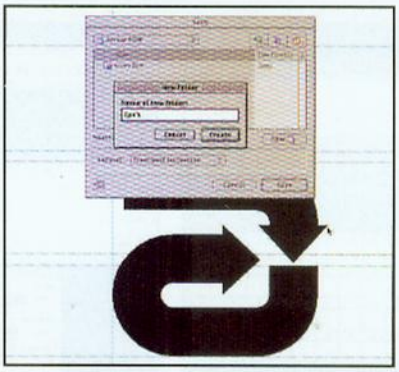
8 These characters now need to be arranged into sets of separate files: Upper/Lowercase, Numerals, Punctuation, European characters (like the German double 'S': 'ß') and Accents.



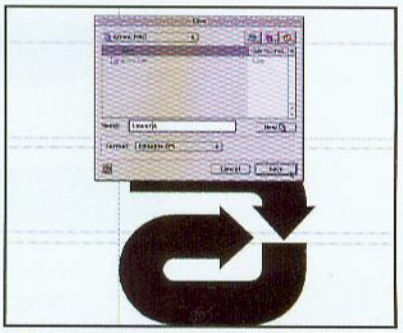
9 Once you've organised the separate files of your font characters, refer back to the grid from which you originally produced them. Create a square that covers the x and y space (height/depth as well as length) of the grid, making sure you include the baseline. This will be used to help import your letterforms into *Fontographer*.



10 Open one of the individual character sets you created and copy the grid square into it. Cover the square over the first character of the file so that it sits on the baseline (if you've worked it out right, the character should fit within it). Now delete the rest of the characters in the file until the covered glyph is the only shape remaining.



11 Save this file as the letterform that you've covered as a vector EPS. Place it into a folder that has been named after one of the sets you created in Step 8 above.



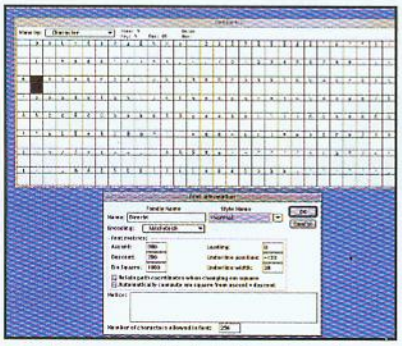
12 Repeat the previous two steps until you've got separate files for every character you've created within all of the categories created in Step 8. Once you've completed this step, you're ready to begin importing all of the separate EPS files into *Fontographer*.

Part 3: Spacing and kerning

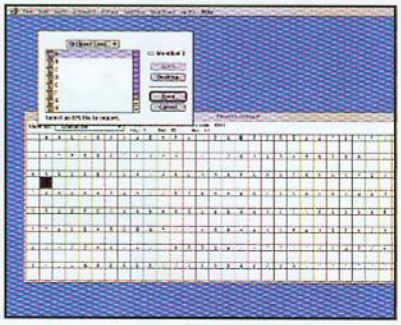
Import your characters into *Fontographer*, and get the spacing and kerning right...

Start by spacing

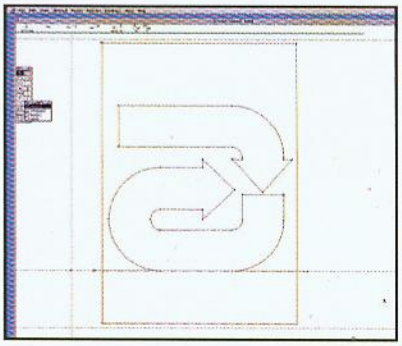
Once you've designed your font, spacing it is vitally important before you begin to kern. You can accurately 'space' a font in a lot less time than kerning, and by doing so will cut out the time you spend in arranging kerning pairs such as the uppercase 'T' and lowercase 'j'.



1 Open up a new file in *Fontographer* and name it after your font name by going to: Element>Font Information. Now save your new font file in a separate folder from the characters you've created in the previous section.



2 Once you've named your font, you have to begin importing all your characters. Do this by selecting the uppercase 'A' cell in the *Fontographer* character window. This should now turn to black. Now go to: File>Import>EPS and import the uppercase 'A' from your character sets.

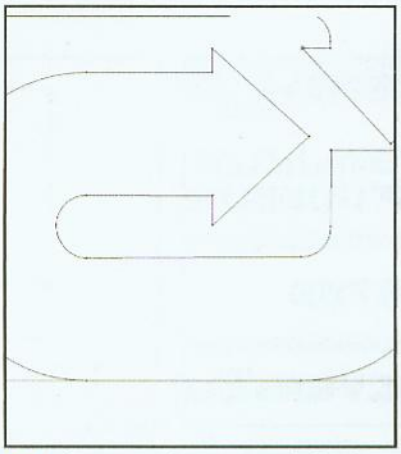


3 Having imported it, double-click the cell to open up its own window. You'll notice that the grid created and placed over it from the previous section has been imported too. You can delete this grid because it no longer has a use.

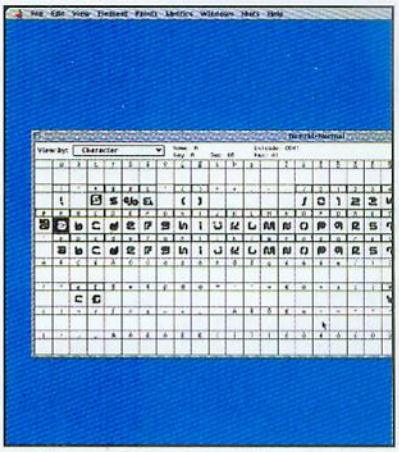
Part 3: Spacing and kerning continued...

Naming your font

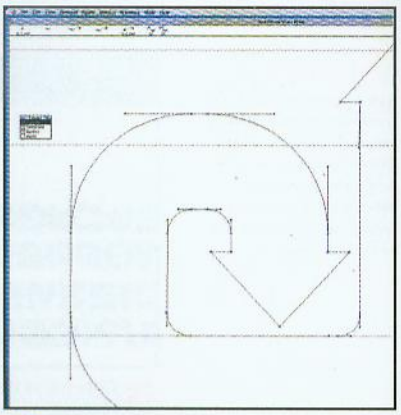
Be careful when naming your font because you may be breaching copyright if there's already a font out there with that name. We try to misspell our font names by adding an extra letter like the extra 'k' in Direckt. That way there's less chance of another foundry having the same name.



4 Make sure your character sits on the baseline of the cell (marked with an 'x'). It's important that it does this, because the baseline is where every character in your whole font will eventually sit.

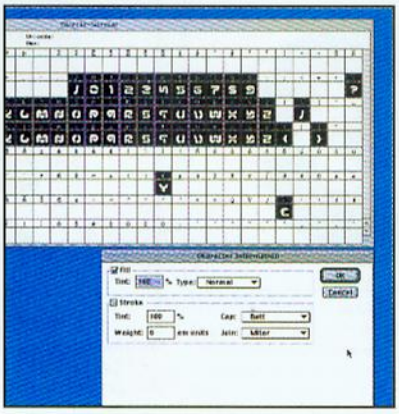


5 Now repeat Steps 2–4 for all the characters, until they're all placed into their individual cells and are sitting on the baseline. Make sure you delete all the grids that were imported too.



6 Now that all of your glyphs have been imported, you need to check that they've been cleaned up. Go over each character of your font, making sure that it has been imported properly and that there's nothing wrong with it, such as missing points, bent lines and so on.

7 Highlight all the characters in your font and select: Element>Correct Path Direction. This eliminates any punch-outs of your font not appearing when using the PostScript in other programs. Check that this has worked by highlighting your font and opening the metrics window using Command-K.



8 If your font doesn't appear in the metrics window as a 100 per cent fill, you need to highlight all of your characters again. Select: Element>Selection Information and change the tone of your font to 100 per cent fill. If you don't do this, your font will be unreadable in other programs.

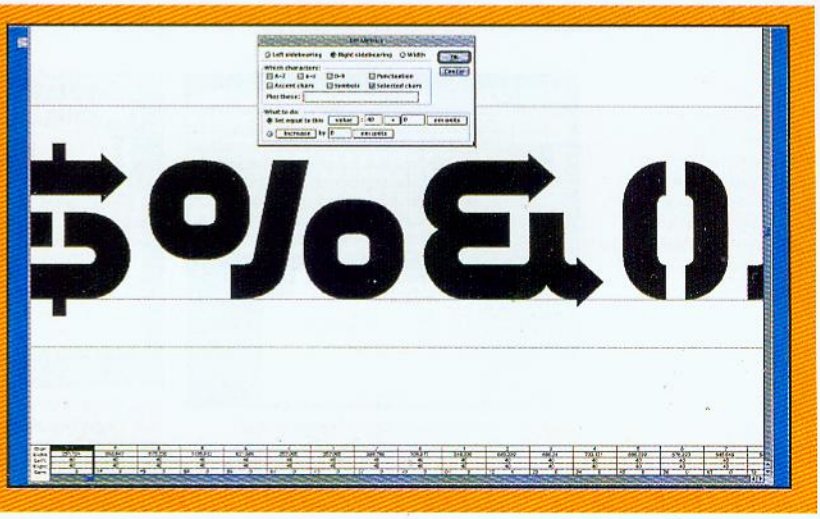
9 Highlight all the characters and open up the metrics window again. You'll see that some of the characters are out of place or are overlapping one another. This is because the font hasn't been spaced correctly.

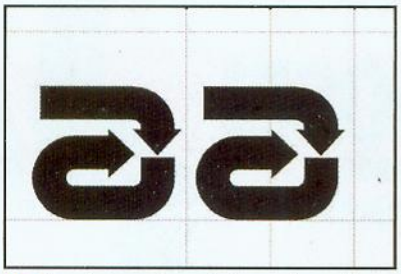
Spacing your font

A quick and easy way to space your characters...

The metrics window is the best way to space your font. Highlight all your characters and select: Metrics>Set Metrics. A window will appear with various options. This device can help you to cut corners when spacing your font by simply adding the em space to the 'What to do' section. Set the 'value' to around 40em units. Now select Left Sidebearing and press OK, making sure all of your glyphs are highlighted. Repeat this all over again for the Right Sidebearing option too. Once you've opened your metrics window again, you'll see that each character has an equal amount of space around it.

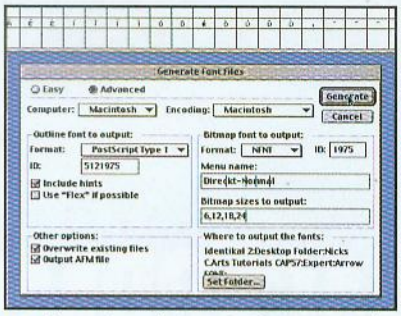
Now you should go over each character carefully in order to avoid any laborious work later on. Check that each character has an equal amount of 'negative space' between its sidebearings (not the ems measurement). If it looks uneasy, tighten or loosen the space by grabbing the sidebearing bars (L & R). Do this until all of your characters sit together nicely.





10 If you've spaced your font correctly, you'll notice that you've saved some time on the kerning pairs. But you still need to kern your font correctly in order to use it. You could use the Auto Kern function, but this tends to be messy. The best way to kern is through the metrics window. Open the uppercase 'A' in the metrics window, and type out the lowercase 'a'. You'll notice a small box along the bottom with 'KERN' 'Aa'. This shows the space between the two letters and can be altered as you please. Repeat this step with the rest of the lowercase characters, until you've kerned all the upper and lowercase letters.

11 This is a display font, so you don't really need to kern every character – such as the punctuation marks and numbers – because these will be fine with the spacing you've already created for them. Your typeface will now need to be exported as a PostScript font.



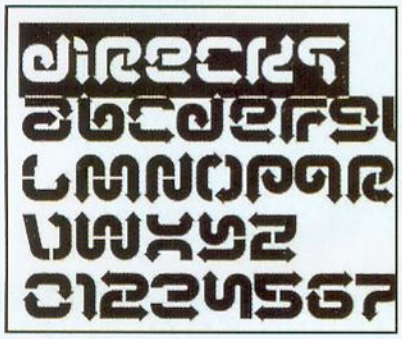
12 To export your font as a PostScript, you need to use the Expert mode in the File>Generate Font Files drop-down menu. Select your platform type (PC or Mac) and your encoding system (Windows or Mac). Then select PostScript Type 1 as your format. Create a seven-digit number for the PostScript to work on your machine and printer, in the left-hand side of the window. Then change the Format in the right-hand side of the window to NFNT and add the name as well as the point size of your fonts bitmaps. Now generate your font!

Part 4: Using your font

Now that you have a PostScript of your typeface you can use it creatively...

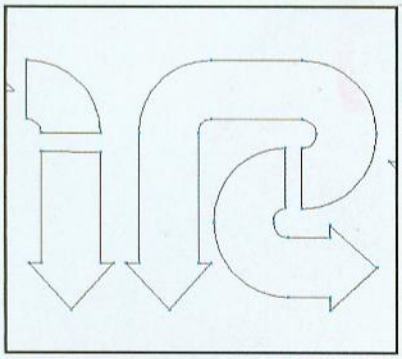
Vector illustration

Vector illustrations work best when using display fonts like Direckt. Because the typeface is built up of similar shapes throughout each character, it's easy to use them as graphic objects throughout your illustration. This links well throughout the theme of your piece and gives your work a more fluent look.



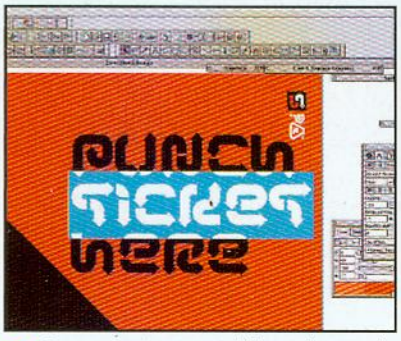
1 When opening up your PostScript font in a vector program, use either *Suitcase* or *Adobe Type Manager*. Make sure your font is working on screen, by checking that the anti-alias version is used rather than the bitmap.

2 Type out the letters which you feel best define the characteristics of the typeface and which include the shapes that make up the whole character set of your font.

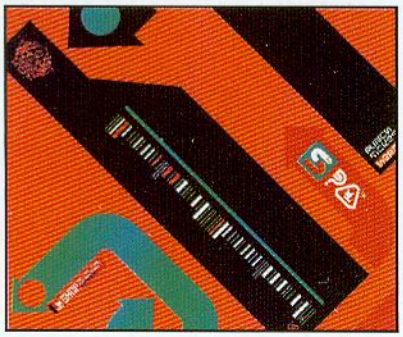


3 Turn these characters into editable shapes by using your 'text to outlines' feature. These shapes can now be used as graphic objects throughout your illustration.

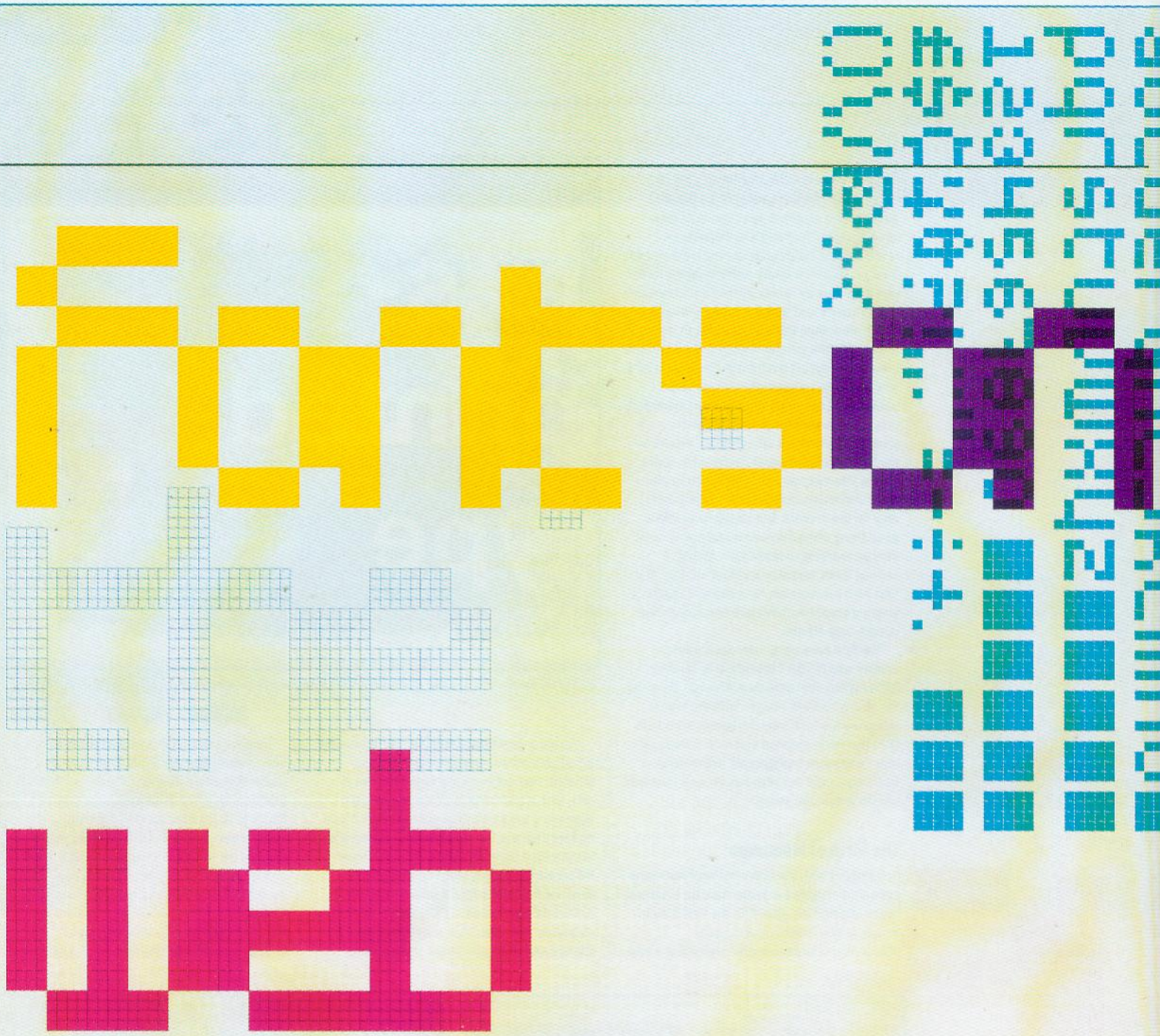
4 Once you've arranged your graphic objects from your typeface, think about creating logos and shapes that can be used as interesting details to finalise your illustration. Here we've created a shape over the 's' and added a TM symbol. We'll use this as a logo throughout the image.



5 Once you've incorporated all your shapes and logotypes/icons, add text which complements the hierarchy and composition of the illustration. Start thinking about using two to three colours that will give your piece uniformity.



6 Once you're happy with the arrangement of your objects and the use of your new display font, you have the basis to create your own unique illustrations. Now you'll be able to see the full power of designing and using your own typeface.



Creating fonts for the Web

We take you through the history of digital type, from the birth of Netscape to indexable text, and then show you how to prepare your own type for the Web…

It's taken a while to fully mature, but type and typography on the Web has finally come of age. In many ways it's still steeped in the language and techniques carried over from print, which in itself has a rich tradition going back hundreds of years. Leading (pronounced ledding), for example, refers back to a time when strips of lead were used to increase the distance between lines of text in the days of hot metal typesetting. In a digital context, this is meaningless, and even less so when talking about type viewed on screen.

For a while, putting the words typography and Internet together was an oxymoron, as stuffy typographers scoffed at the thought of creating beautiful layouts on screen. However, several factors have emerged that make it entirely possible to compose and design great-looking, typographically rich

Expertise provided by Jason Arber, co-creator of Pixelsurgeon, the popular arts and media portal. Find out more at **[w]** www.pixelsurgeon.com

The files needed for this tutorial can be found on the cover CD. Navigate your way through these folders: Software\Tutorials\In The Mag\Fonts for Web.

Illustration by Subdistance®

pages — namely CSS and Flash. CSS (an abbreviation for Cascading Style Sheets) allow for the accurate positioning of text, specifying the font and a wide range of attributes including size, colour, leading and effects. *Flash* has really opened things up for typographers by removing the limitations on the font used and introducing anti-aliasing, which smoothes the appearance of type.

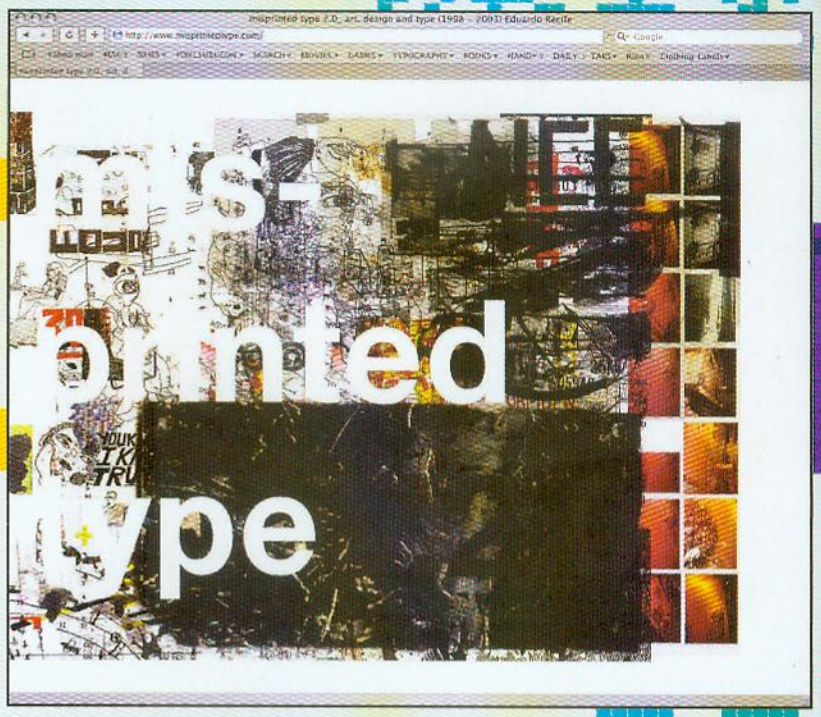
Perhaps the greatest change, however, has been in accepting the Internet for what it is: a new medium, rather than print's poorer cousin. And ten years after the first graphical browser, there are probably designers producing excellent typographic layouts for the Web who have never designed for print.

The Internet was never designed to place huge importance on the look of documents, only on the content. But designers know a good thing when they see it and pretty soon they were trying to retrofit the ability to choose fonts, font size and font colours. The first Web browsers were not even capable of viewing graphics; they were command-line or text-only affairs.

The first browser to introduce inline images was NCSA Mosaic 2.0 in January 1994 (which also introduced forms). By using the ability to show images with the text, it was possible for canny designers to include GIFs that had rendered versions of company logos and other typographic information. It was a start, and the Web has come a long way in a little over ten years.

The birth of Netscape

In October 1994, the first version of Netscape appeared, together with the concept of tables, which allowed designers for the first time to structure Web pages by accurately positioning elements on the page using a grid.



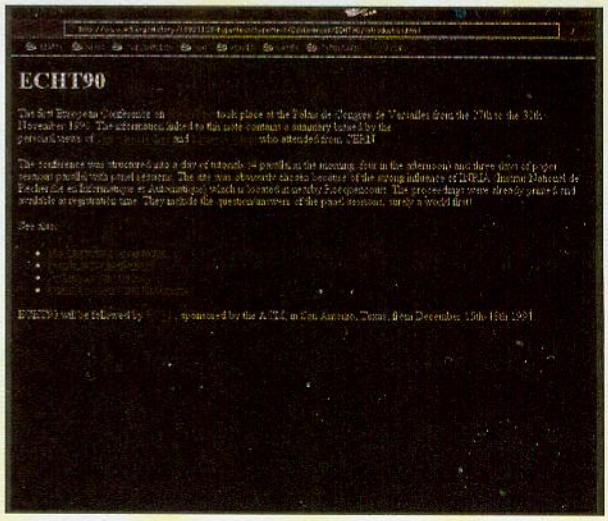
Bitmap images are often the only way forward when trying to get a grunge look like [w] www.mtsprintedtype.com

An early problem that frustrated would-be typographers was the different way that browsers on different platforms rendered text, with type on Macs in particular often appearing too small. This was because Macs had settled on a 72-pixels-per-inch standard for screen resolution, while Windows used 96 pixels per inch. It wasn't until Internet Explorer 5.0 for the Macintosh settled on an artificial 96ppi standard for rendering Web elements that other Mac browsers began to change and the issue began to dissolve.

One way around this problem was to use a new method for specifying Web layouts: Cascading Style Sheets. Introduced in a practical way by a beta version of Internet Explorer 3.0, and expanded upon in subsequent releases, CSS enabled you to specify type sizes in a variety of ways, such as the traditional points and the more accurate, cross-platform friendly pixels.

A common font set was established by Microsoft which allowed designers to specify a particular typeface from a narrow

With its simple table-based layout, blue underlined links and inline images, the minimal design of Google would have been considered cutting edge in the mid-nineties. Today we view it as simply fast-loading and functional.



This is as good as typography got in 1990: one of the earliest Web pages demonstrates the simple approach to type. Looking at the source code, the typeface wasn't even specified, only the tags for headings, links and lists.

Some Websites, such as [w] www.minkengine.com, make heavy use of chopped-up images set in a table to create their layouts. This can mean long downloads, unless the images are intelligently compressed.

range and be certain it would look the same, or almost the same, on Macs and PCs. The set included Times and Arial, and fonts created with on-screen use specifically in mind, such as Verdana and Georgia, both designed by legendary type designer Matthew Carter. There were also odd typefaces such as Comic Sans, which no self-respecting typographer would ever use.

Embedded fonts

But even this new range of typefaces was not enough for some, and in the late nineties competing technologies championed by Microsoft (OpenType/WEFT) and Netscape (TrueDoc) allowed the embedding of fonts into Web pages. The incompatible nature of the technologies and patchy browser support meant that designers were starting to look elsewhere.

Flash, the ubiquitous plug-in from Macromedia, was a Web designer's dream come true, enabling the embedding of pretty much any font to create lightweight files that could be viewed by just about anybody with the *Flash* plug-in. With animation and scripting capabilities, soon entire sites were being built in *Flash* with only a token amount of HTML to hold the *Flash* movie in the Web page.

Designers now have three main methods of using type in their pages: rendered type such as GIFs, JPEGs and PNGs, which cannot be selected or edited by the user, but can look great; HTML text formatted using CSS providing editable, indexable text that is easy to update; and *Flash*, which allows any font to be used, as long as the user has the correct plug-in. Often, a designer will use all of these technologies in a single page, as the following tutorial demonstrates.

"Flash was a Web designer's dream come true, enabling the embedding of pretty much any font to create lightweight files that could be viewed by just about anybody with the Flash plug-in"

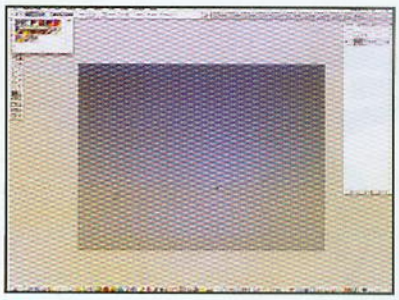
Type foundries, such as OurType, have embraced Flash as a way of previewing their type designs in new and imaginative ways.

With support for double-byte languages and character sets, it's possible for designers to set type in pretty much any language in the world.

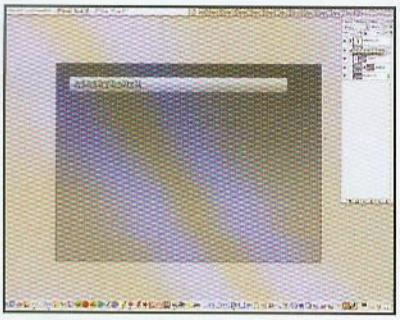
Part 1: Rendered text

Creating non-editable text out of pixels using *Photoshop*...

1 Start by opening up *Photoshop* or *Photoshop Elements* and creating a new RGB document (File>New...) ensuring it's no bigger than 1024 pixels by 768 pixels, with a resolution of 72 pixels per inch. Luckily, *Photoshop* ships with some hard-coded presets, including 1024x768; but if you want to be super cautious, you could create your artwork at 800x600 pixels.



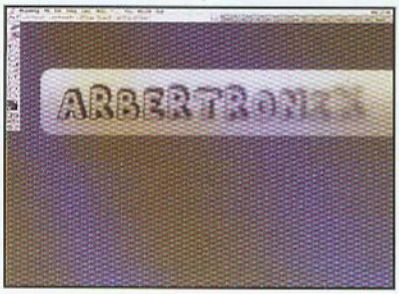
2 With your new document open, begin to build your Website by creating a graduated blend running from top to bottom. Simple linear gradients use the foreground and background colours, and by dragging with the Gradient tool you can create a smooth blend. Hold down the Shift key while dragging to constrain to a perfect vertical.



3 Use the Rounded Rectangle tool to create a background for your text and fill a new layer with a graduated blend. Non-destructively combine the two by creating a Clipping Mask (Layer>Create Clipping Mask). On a new layer, type some text and overlap it with some more text.

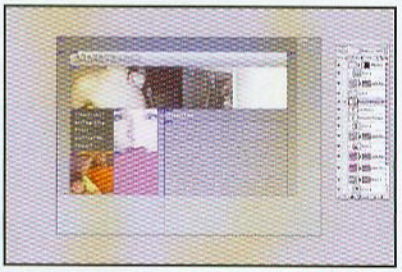
Part 2: Using ImageReady

ImageReady is the ideal application with which to prepare graphics for the Web...



1 Just to make sure that the text could not be prepared in any other way, render the text (Layer>Rasterise>Type) and use the Blur tool to selectively blur the text. Create a Layer Mask (Layer>Add Layer Mask>Reveal All) then, using a soft-edged brush, paint in some transparency.

2 Finish the rest of the site. The navigation will ultimately be created in Flash, but the rest of the page will be HTML. Place some positional text where the main body copy will go. Ensure this text is set in Verdana, 11px high with 15px leading. It's possible to exactly recreate this with live text, as you'll see later.

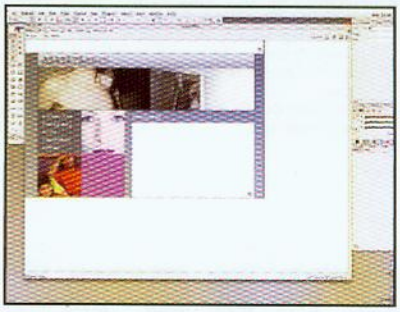


3 Click the 'Edit in ImageReady' button at the bottom of *Photoshop's* Toolbar, which transfers the file into *ImageReady* so that in can be prepared for the Web. Use the Slice tool to divide up the image into logical sections that can then have compression settings and file formats applied to individual sections.

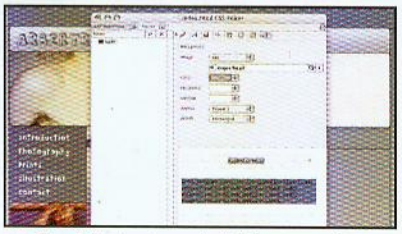
Part 3: Web building

GoLive or *Dreamweaver* provide the best way to bring all the elements together as a Website...

1 Export the sliced image by going to File>Save Optimised As... With the default settings, save the slices as separate images together with an HTML page to hold them in. This can then be edited further in Adobe *GoLive*, Macromedia *Dreamweaver* or even by hand, if you're confident with HTML.



2 Opening the page in *GoLive* reveals that all the images are being held in place by a table structure (although you can edit *ImageReady's* settings to use CSS DIVs instead of a table, which allows for overlapping images).



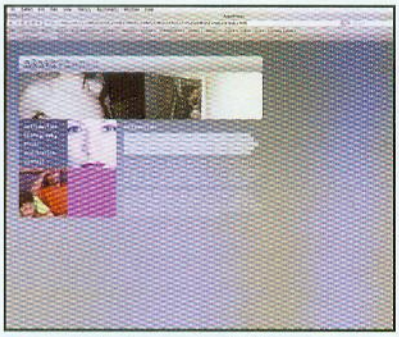
3 To add the background, click the stepped CSS Editor icon to open up the CSS Editor. From the drop-down menu at the bottom-left choose the body tag to define. For the background attribute choose an image URL and navigate to a 1-pixel-wide vertical sliver of the background saved from *Photoshop*. For the colour, make a note of the hexadecimal value at the bottom of the gradient and type in that value. Set the background repeat to Repeat x.

Part 4: Previewing your work

By previewing in an actual browser you can ensure your audience will see what you see...

1 Upon installation, *GoLive* will attempt to track down all the browsers on your computer. If not, you can manually find them via the Browsers section of the preferences (GoLive>Preferences). The checkbox next to the browser name indicates whether it will launch when you click the preview button in the main application. Click it to reveal the site complete with all the rendered type.

2 Delete the placeholder graphic indicating where the body copy should go, and copy and paste in the real text. The cell attributes may need to be changed so the text starts from the top and isn't centred vertically. Using the CSS Editor, select the td tag, which will only apply changes to the table cells. Select the Verdana Family for the font with a Size of 11px and Line Height (leading) of 15px.



3 Previewing the page in a Web browser again shows the HTML text exactly like the original design in *Photoshop*. HTML text is useful because it is fast to download and can be selected by the user for easy copying and pasting.

Part 5: Brightening things up with Flash

Although not as easy to implement, Flash text is ideal when you need a particular typeface...

1 Open *Flash MX* and create a document (File>New...) the same height and width as the navigation placeholder graphic. You can adjust the Flash movie dimensions, background colour and framerate via the Document Properties (Modify> Document...). When you're done, click OK.

2 Import the placeholder graphic as a template (File>Import>Import to Stage...) and on a new layer use the Text tool to recreate the text in the correct font. Select the word, and convert it to a button (Modify>Convert to Symbol...). This will form the template for the rest of the buttons.

3 Create a hit area for the button, which tells Flash the dimensions of the button. Double-click on the new button so that the timeline is replaced by the Up, Over, Down and Hit states. Click in the hit state and create a keyframe (Modify>Timeline>Convert to Keyframes) and draw a rectangle (or any other shape) to indicate the button area.

Part 6: Finishing touches

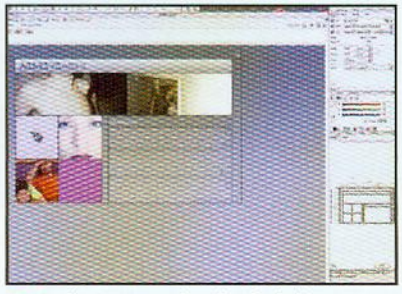
Time to put everything together: rendered text, HTML text and Flash text...

Type resources

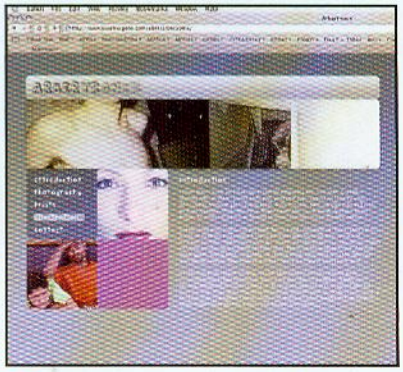
There are some great typography resources on the Net, offering a wealth of advice and type news. Try these sites:

Typographica
[w] www.typographi.ca
Fontlover
[w] www.fontlover.com
Microsoft Typography
[w] www.microsoft.com/typography/default.mspx
Typographer
[w] www.typographer.org
MyFonts
[w] www.myfonts.com

1 Save your Flash movie and replace the placeholder navigation image with one without the text, so that the Flash buttons are not overlapping anything. Adjust the export settings (File>Publish Settings). In the Formats tab, make sure that only Flash is selected and adjust the Flash settings so that Flash Player 6 is supported as there hasn't been any complex ActionScripting. When you're happy, click Publish to export a .swf file.



2 Back in *GoLive*, replace the placeholder navigation graphic with the Flash .swf version by deleting the GIF and dragging the SWF icon from the Toolbar onto the page. Using the Inspector, locate the navigation .swf and manually amend the size, if the Flash positional doesn't automatically resize.



3 The page is now complete and contains three distinct kinds of text. ca-p

Designing pixel fonts

Create your own pixel-based typeface for use on the Web...

There are several programs available for creating font files. The most popular appears to be Macromedia's *Fontographer*, but you might want to take a look at High-Logic's *Font Creator Program*, which offers all the features you'll need for creating a pixel font. It's available for a free 30-day trial, too.

Expertise provided by Cal Henderson. Find out more about Cal's fonts at [w] www.iamcal.com/misc/fonts

Part 1: Initial design decisions

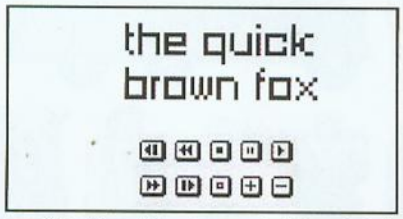
Some things to take into account when designing your font...

Font creation programs

Macromedia's *Fontographer* retails at $300 from [w] www.macromedia.com/software/fontographer whereas High-Logic's *Font Creator Program* at [w] www.high-logic.com/fcp.html costs $30. You can try out *Font Creator Program* for 30 days with no restrictions, so you can create your first pixel font at no expense.

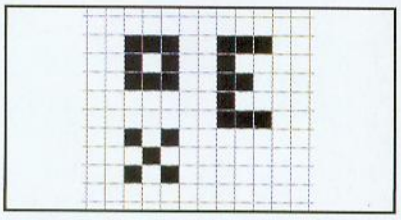
File formats

Many font file formats exist: PostScript Type 1, 2 and 3, FON files, TrueType and OpenType. The only format you need to know about for creating pixel fonts is TrueType – supported by Windows, Mac OS and Flash. It can be used everywhere you'd want to use your font and can be created using more tools than any other format.

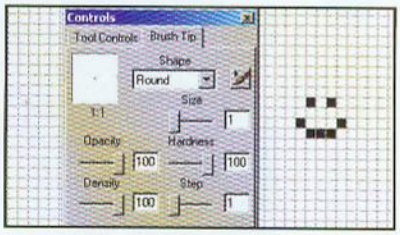


1 A font doesn't have to comprise letters. A pixel font can provide the traditional set of 26 letters and some punctuation, but could just as well contain a set of symbols or pictures. The first decision to make is which of these routes you want to take. If you choose to create an alphabetic font, you need to consider which punctuation symbols you'll include. A font that contains only 26 letters and 10 digits isn't very useful in practice.

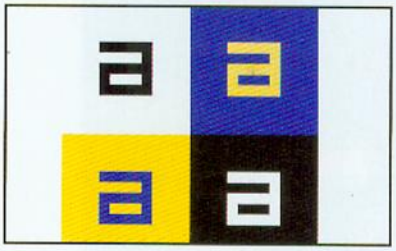
2 Neither Windows nor Mac OS can handle two fonts with the same name, so you'll need to think up a unique name for your creation. The name of your font shouldn't include the character weight and style (such as bold or italic) because these will be pre-pended to your font's 'family name'. You might want to create more than one style or weight of your font, but create a regular version first.



3 The characters in your font need to be consistent, especially in an alphabetical font. To make sure you have enough room for each character, you need to decide the size you'll reserve for each character. If you're creating a tiny alphabetical font, then you'll need at least five pixels height for a uppercase 'E', which means other characters must also be five pixels high, even if they could fit in less space.

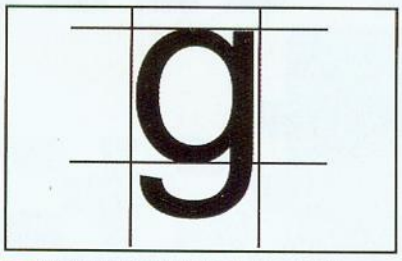


4 You need to create each glyph at the size it will eventually be used. This means you'll be creating very small images with your favourite graphics package. Create a blank image and zoom in as far as you can so each pixel on screen will look huge. You'll need to set the Paintbrush tool to have a 1-pixel brush with 100 per cent opacity.

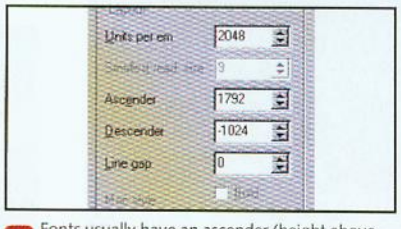


5 Fonts consist of a single colour – the fill colour. A font file only specifies which areas of the glyph are filled and which are not, with no colour information stored at all. When someone uses a font, the program figures out which pixels need to be filled and colours them with the text colour.

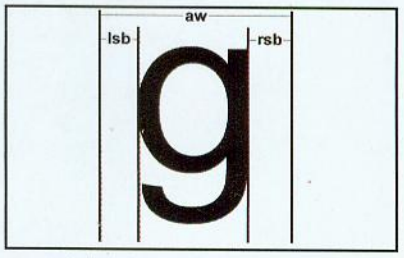
6 Create each character using only black-and-white pixels. When you think you've finished, copy and paste some of the characters into sentences to see if they look consistent. At this point you might want to add an extra pixel here and there to make the font consistent.



7 Fonts are designed in the abstract 'FUnit' measurement. FUnits also make up the abstract 'Em-Square'. The number of FUnits in an Em-Square is a value you choose when creating a font. The Em-Square is supposed to represent a single character. To create a pixel font that works on PCs and Macs and works fine in Flash, you need to have an Em-Square of 2048 units, and create each pixel in your font as a 256x256 FUnit square.



8 Fonts usually have an ascender (height above the baseline), descender (height below the baseline) and line gap (space between descender of the first line and ascender of the next). For a pixel font, you should set the ascender to the height of your tallest character above the baseline (in pixels, multiplied by 256), set the descender value to the height of the space below the baseline and the top of the next line of characters (the traditional descender plus line gap) and set the line gap to zero.



9 Each glyph has a Left Sidebearing (LSB), Right Sidebearing (RSB) and Advance Width (AW). The LSB is the space before the start of the character, the RSB is the space after the character and the AW is the sum of the two bearings and the actual width of the glyph. For pixel fonts, you'll want to set the LSB to zero and the AW to the width of the character plus the number of pixels of space to leave after it (all multiplied by 256).

Part 2: Creating the glyphs

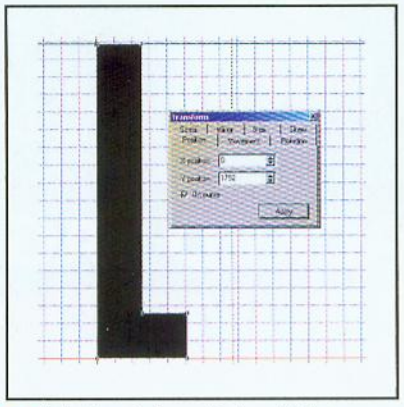
With your font file prepared, it's time to make the glyphs...

Famous pixel fonts

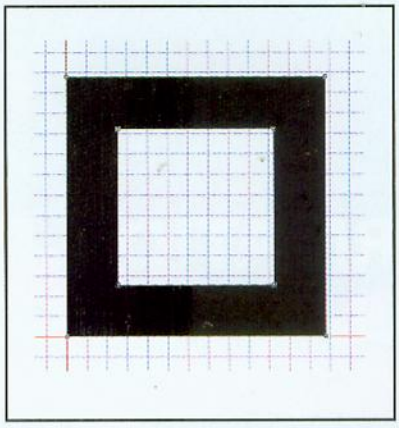
There are quite a few pixel fonts available on the Web, which you can use for inspiration and guidance. Arguably the most famous and widely used pixel font is Silkscreen [w] www.kottke.org/plus/type/silkscreen created by Jason Kottke. Atomic Media have created lots of very good (non-free) pixel fonts at [w] http://atomicmedia.net

Calculating numbers

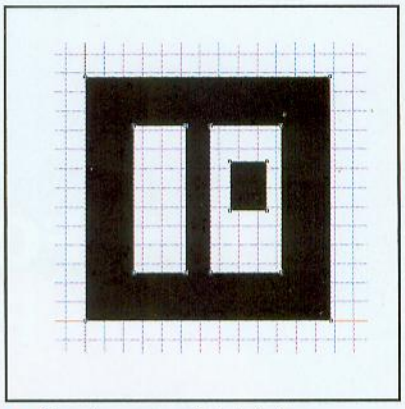
So why do we use an Em-Square of 2048 and make each pixel 256 FUnits on each side? The answer is related to how fonts are 'rendered' on the screen. There's a formula used to relate FUnits to pixels, based on the Dots Per Inch (DPI) of the target device. Windows has a DPI of 92, whereas Mac OS and Flash have a DPI of 72. For more information about how the numbers are calculated, read my tutorial 'Creating a Pixel Font from scratch', available at [w] http://iamcal.com/fonts



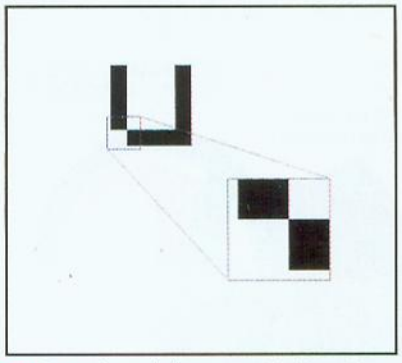
1 Each character in your font needs to be created as a glyph in your font file. Each glyph is made from one or more contours. A contour is a simple filled path. Pixel fonts don't have curves, so you only need to create contours consisting of simple points.



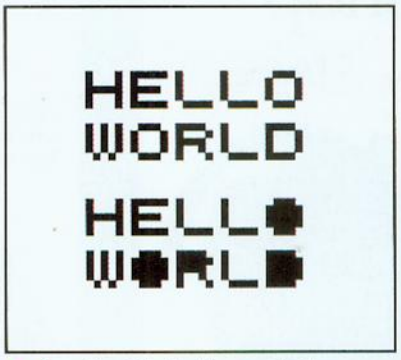
2 To create a 'hollow' glyph with a part cut out, such as an 'O', you need to create two contours – one for the outside and one for the inside. By changing the 'direction' of the inner contour, the space is 'cut out' of the outer contour.



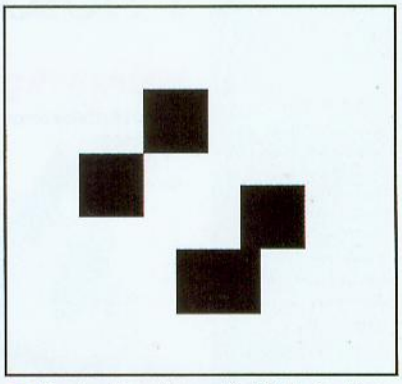
3 To create more complicated glyphs you may need to add another contour inside a second contour. By changing the 'direction' of the third contour you can 'fill in' a region of the 'cut out' contour. Any number of contours can be combined in a single glyph to make any kind of complex shape.



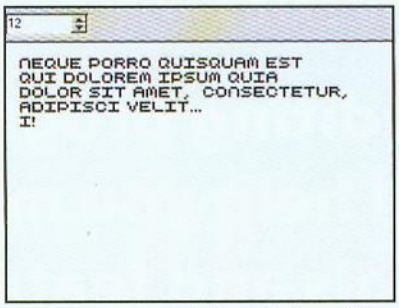
4 Some of your glyphs may contain intersections. This is where a point or edge of a contour crosses another point of edge, of the same or a different contour. If you've been logical about creating your glyphs, then you shouldn't have any intersections, except in cases where your glyphs have a 'sharp corner' as shown in the screenshot.



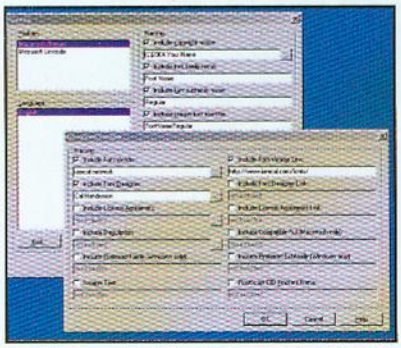
5 According to the TrueType specification, contours should never touch or cross. In practice, on Windows and Mac OS, this doesn't cause any problems. Unfortunately, Flash is a little more picky about intersections. It ignores the second contour in such cases, which results in hollow glyphs not being hollowed.



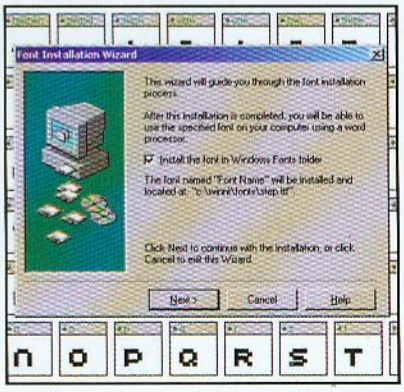
6 To solve this problem, while still allowing 'sharp corners', you need to zoom right in to the corners in question. By moving one of the overlapping points by a single FUnit, you can stop the points from touching, while keeping the same appearance when viewed at normal size.



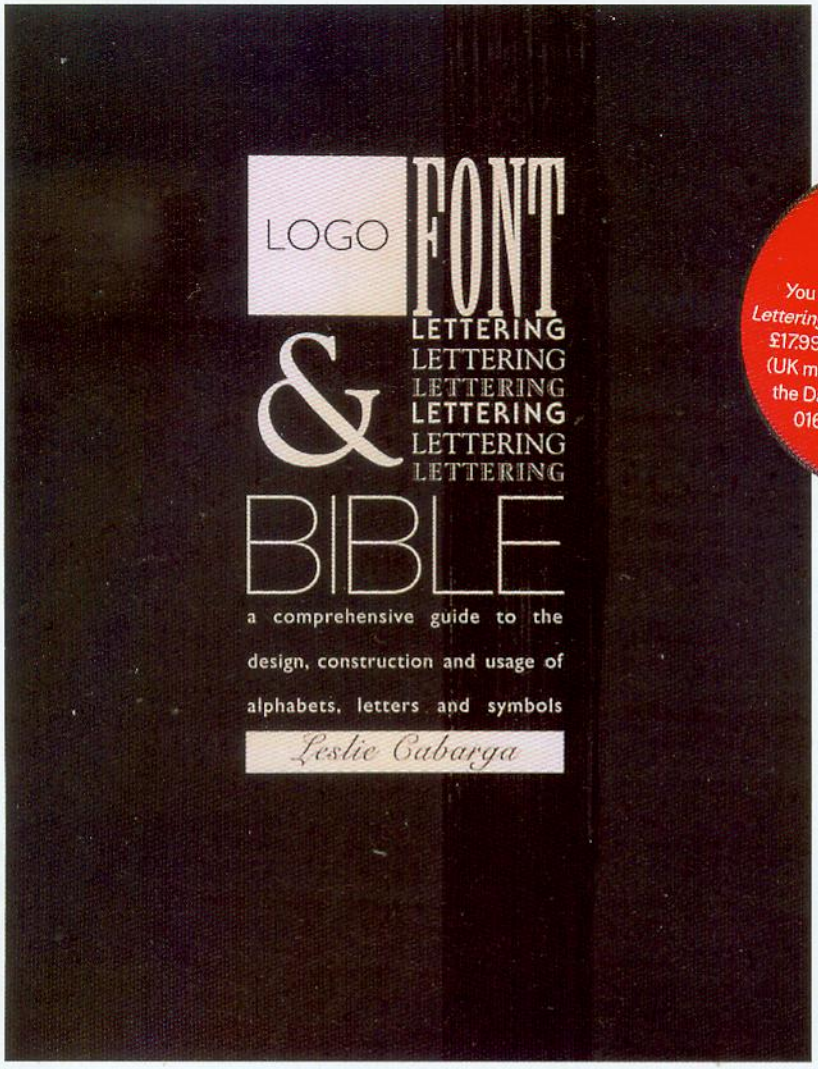
7 Once you've created all your glyphs, you'll need to check them over to see if you've missed anything or messed up any measurements. You can preview the font from within the font creation software by typing some test text – try different combinations of letters, numbers and punctuation to check they all fit together fine. Some problems, such as spacing, only become apparent when the characters are viewed together in words.



8 If you're going to be sharing your font with anyone else, it's a good idea to add your name to the copyright line. Font files also have space to add links to your Website, the name of the designer, the name of the vendor and lots of other (optional) settings. It's worth having a dig through the dialog boxes and filling out any extra details you want to.



9 When you're completely happy with your font, it's time to install it and take it for a test drive. Use the installation wizard in the font creation software, then fire up a graphics program and your font should be available to use. CRP



SPECIAL DISCOUNT OFFER

You can order the *Logo, Font & Lettering Bible* for the special price of £17.99 (rrp £18.99), plus free p+p (UK mainland only). To order, call the David & Charles Hotline on 01626 334555 and quote code Y111.

Designing logos and fonts

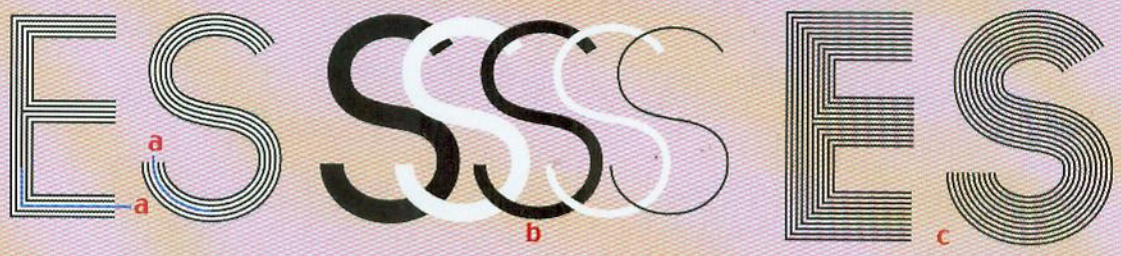
Seminal illustrator, logo and type designer Leslie Cabarga shares his hard-won expertise in this extract from his latest book – the *Logo, Font & Lettering Bible*

Leslie has been an illustrator and designer since 1970. He's created magazine covers for *Time, Newsweek, Fortune* and *National Lampoon* and worked as a designer for *Rolling Stone* and San Francisco's *City Magazine*. He has also written over two dozen books on design including *A Treasury of German Trademarks, Dynamic Black and White Illustration, The Art and Design of F. G. Cooper,* and *The Designer's Guide to Global Color Combinations*. By 1993 he'd created the first of many successful computer fonts, such as Magneto, Streamline and Kobalt, distributed by The Font Bureau, Agfa-Monotype, and at his own Website, [w] flashfonts.com.

His latest book from HOW Design Books (David & Charles publish the UK edition) is *Logo, Font & Lettering Bible*, which incorporates all the information from classic lettering manuals of the past, and applies it to computer type design today. It also includes tips for building a profitable business with logo design work.

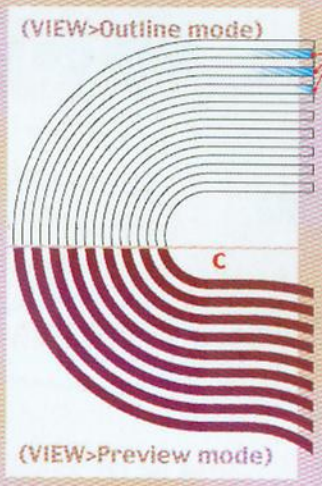
Here, Leslie demonstrates some of the many ways of approaching a logo, as well as how to create distinctive lettering effects. >

OP ART CONCENTRIC LINE LETTERS



These neat effects begin with skeleton letters, a, stroked at 1 point. Above at b are the five levels of strokes this effect required. To achieve this style, start with a 9-point stroke on bottom. Copy and Paste in Place a second layer on top but make it a 7-point white stroke. Then Paste a 5-point black stroke, and so on, alternating black/white strokes, each 2 points less than the preceding one, until the top level is the 1-point skeleton stroke we first drew. Example c, above, goes a few steps further into our Op Art odyssey by utilizing nine levels of graduated-width strokes. This time the white strokes have been assigned the same color as the page background. The key to this effect is to always add or subtract the same number of points to each successive stroke so an even effect is achieved.

Geometric-style letters, a, work well with a concentric lines effect. To try some variations, select all strokes and change them into filled objects with Outline Strokes. Hit Divide in Pathfinder pallet, and then Delete all the unneeded in-between shapes shown at right, b, in the enlarged view of letter *S*. Here the top of the *S* is shown in VIEW>Outline mode to show that these lines are now filled objects. The bottom of *S* shows the fills in VIEW>Preview mode.



Now that we've Outlined Strokes, we can have more fun with this style: At d, Delete the second of the concentric lines, then Delete just the innermost corner points of the first and third lines. Select the two outer corner points and Join them (⌘-J). Do the same on the other end. At e, you can see how the strokes will look when joined correctly. The final effect can be seen at f. This isn't a dimensional effect, it's just decorative in the "Fake-o Deco" style that became popular in the 1970s.

There are plenty of variations on this style, all starting with skeleton-stroke letters. Example g was adapted from example f shown in the middle row of this page. Example h contains five layers with 16-, 13-, 10-, 6- and 3-point strokes all with Round Caps. All strokes forming the crossbar of *E* were sent to the back, below the curving outer stem strokes. The variation shown above at i was also begotten from the previous example f. Three of the center lines were deleted and then the two outer strokes were copied and placed off to the side where they were merged manually into an overall white silhouette, which was then placed on the bottom level. Our last variation, example j, simply consists of five layers of strokes, alternating red and black going in 4-point increments from 20, 16, 12 and 8, to 4 points wide. As in h, the crossbar strokes have been sent backwards, placing them under the C-shaped stem. Notice that Adobe Illustrator does a very good job of maintaining parallelism as stroke widths increase, so all these concentric line effects were kept nice and even without imperfections to cause visual disturbance.

"STONED" and FACETED LETTER FACES

1. STONED DROP SHADOW Set some type. Create Outlines. (Some simple drop shadow effects can be made without Creating Outlines, but for complicated work, it's better to do so.) Fill type red.

2. Add 2.5-point white-stroke outlines. Select the letters and Outline Strokes. Now the strokes have become filled compound paths and the red letters are separate objects underneath the white outlines.

3. Select only the outlines (really, they're now fills) and give them 0.5-point black strokes (use heavier stroke widths than I'm specifying if you're creating your letters very large on the page).

4. Select the white outlines with the black strokes (be sure to select both the inner and outer lines, a, including surrounding the counter hole in letter *A*). Hit Copy, but don't Paste yet. Before Pasting, fill the white outlines black, as shown in b.

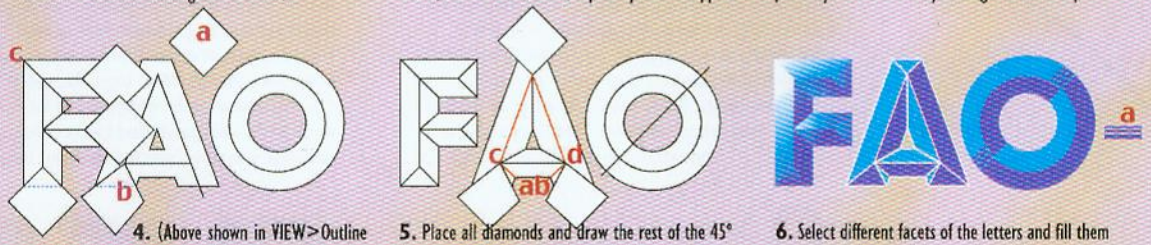
5. Now Paste in Front the white outlines, but before deselecting them, hit the Up Arrow and Left Arrow keys twice each. The black-filled outlines will show underneath the white outlines and the letter faces will have a recessed look.

6. To add block drop shadows, Lock all the levels of the letters just made. Paste the same outlines again, but now Paste Behind (⌘B). Drag them 45° southeasterly. Paste Behind once again. Select and unite these two copies. Proceed as on page 181.

1. FACETED LETTERS Draw some skeleton-stroke letters (see page 150) and stroke them fat. Above are 18-point dark blue strokes (the thin blue inlines are to show the original skeletons).

2. Copy skeleton letters. Apply Outline Strokes to the fat-stroked letters. Draw rectangles and use Subtract From Shape to cut off bottoms and top of *A*. Above, bottom stems done, top ready to be chopped.

3. Above, with the letters trimmed, Paste in Front a copy of the original skeleton strokes. If you dragged the copy off to the side, make sure it is perfectly centered when you drag it back on top.

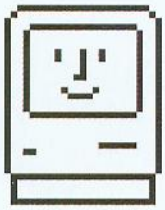


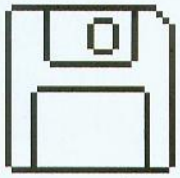
4. (Above shown in VIEW>Outline mode.) Rotate a square shape 45° as at a. Drag copies of this "diamond" over the ends of stems. Distort the diamond at b to make it align. Draw 45° strokes, as in c, that extend beyond the edges of the letters. Diamonds and 45° strokes must intersect corners.

5. Place all diamonds and draw the rest of the 45° lines as at a, b. Drag strokes c and d up to the top points of the diamonds. Draw a 45° line through *O*. Now select all letters, lines and diamonds and hit Divide. Delete excess shapes that fall outside of the letter boundaries. Letter *F* shows the final result.

6. Select different facets of the letters and fill them as you wish. Letter *F* has gradient fills, each facet carefully modeled with the Gradient tool. The *A* has solid fills with white strokes added. For *O*, I created gradating lines, a, rotated them 45° and knocked them out of the *O*, again with the Divide filter.

OTHER FACETED EFFECTS For a flat-faced, chisel-edge effect, Paste a copy of your original skeleton-stroke letters over the facet treatment you completed above. Assign thicker stroke weights to the skeletons, then drag stem ends in toward the centers of the letters as in a, b, c so the 45° lines meet right at the corners of the strokes, as in x. Apply Outline Strokes to the skeletons and then unite them. In y, these new letter faces were given thin white outlines. In example z, four flat fills, from yellow to red, were assigned to the letter face and its facets.





Icons through the ages

We take a look at icon design – past and present – and find out how best to work on symbols that are part of the everyday lives of millions of people worldwide...

Left and Above: Susan Kare created the original Macintosh icons, which have influenced countless icon designers since.

Few designers have had as much impact on the look and feel of computer interfaces as Susan Kare. Her designs for Apple have become part of the language of computing, and remain highly influential for icon and interface designers the world over. The story of icon design for popular computers effectively began with her efforts, in 1982. Susan was contacted by a high-school friend, Andy Hertzfeld, who was deeply involved with the Macintosh project. She joined Apple, and began working on icons and metaphors that form the basis for many sets still in use today.

Although there were more restrictions in place for those fledgling efforts – the Macintosh display was black and white, and the icons were 32x32 pixels – the way she approached the designs provided a rulebook for subsequent icon designers. "Good icons reflect an economy of expression, and are simple and memorable," explains Susan. "They are symbols, rather than illustrations, that mean something. It's about finding the right metaphor, and figuring out how to present it."

Signposts

Susan likens icons to road signs: immediately presenting an idea in a clear, concise and memorable way. Perhaps the use of shapes within road signs for specific concepts (for instance, triangles for caution) influenced her designs? After all, there were no previous guidelines to draw on. "We did need to ensure that icons for different things could be differentiated," says Susan. "Of course, we had no idea things would scale up so much, but initially documents were represented by pieces of paper, and applications (activities) by a hand doing something on a diagonal shape."

The restrictions in place also meant the modern temptation to rely on photographic images simply didn't exist. In many ways, according to Susan, this was an advantage rather than a hindrance: "When images are simple, they don't exclude people. If you see the outline of a pencil, it's a symbol of writing from no particular recent decade. If you employ an image of a chrome ballpoint pen, it's a very particular image – it may remind you of what you write with, but just as easily not."

A few years later, Susan joined the opposition, working on icons for Microsoft's Windows 3.0 operating system. Although the icons were still restricted in size, the availability of a colour palette provided scope for new ideas. "I was interested in using colour to define various interface elements – it was suddenly possible to replace black rectangles with images that looked like three-dimensional 'pressable' buttons."

Susan's ability to get so much from so little paid dividends when working the limited VGA 16-colour palette, dithering patterns to get around the constraints. Despite this, she continued to optimise her icons, remaining true to her ideals of clarity and simplicity.

Expertise provided by Craig Grannell. For more information, visit his Website at **[w]** www.snubcommunications.com or you can contact him at **[e]** craig@snubcommunications.com

Unhappy Mac

Icons can make your computer more welcoming...

During the early 1980s, the stereotypical image of a computer was something cold and intimidating. One piece of direction Susan Kare was given when designing the original Macintosh icons was to make them friendly, so that the computer would appeal to a wider audience. "This led to me putting a smiling face on the Mac icon," explains Susan.

Of course, times change, and technology moves on. All computers – not just Macs – became increasingly user friendly, but only one of them smiled at you when you booted it up.

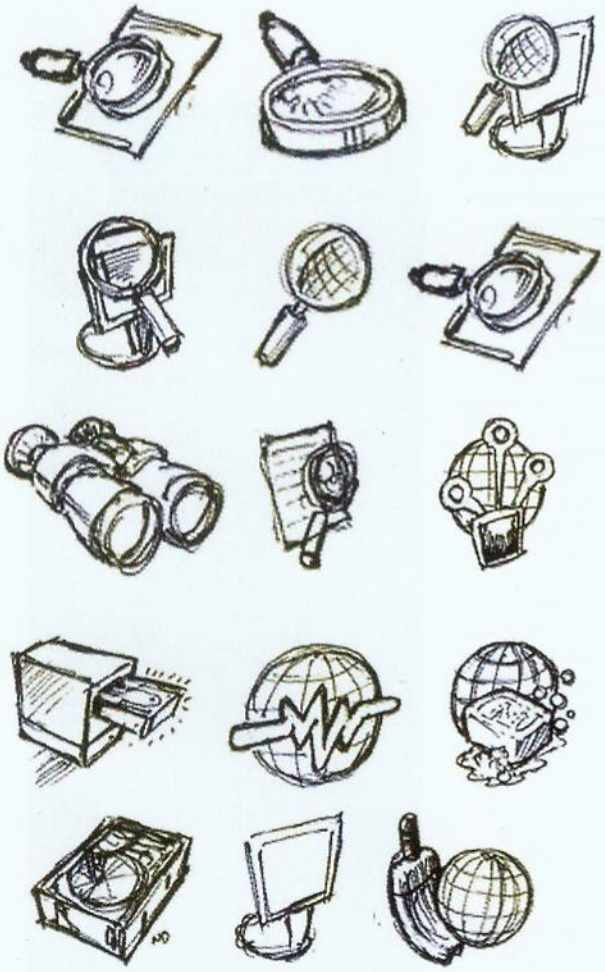
The Happy Mac icon survived successive Mac OS revisions, although a splash of colour was added along the way. Some suggested the symbol was more than a mere icon, and expressed the entire Mac philosophy. Such people were horrified when, after 18 years' service, Apple dumped the Happy Mac, replacing it with a grey Apple logo during Mac OS X 10.2's start-up sequence.

So, how did Susan feel about the uproar that occurred after the logo was ditched? "I was bombarded with kind notes from people saying that symbol meant something to them," recalls Susan. "I appreciated it, but I haven't worked for Apple for a long time, and so I focus on solving design problems for my current roster of clients."

Susan Kare icons

Classic icons, such as this selection from Susan Kare, have much in common with pixel art, where every pixel counts.

Above: Modern icons, especially those on OS X, border on being photographic images, so care must be taken to ensure they remain memorable and easy to decipher.



Above: Like most icon designers, The Iconfactory's work tends to start on paper, enabling ideas to be discussed and ensuring the team is not distracted by technology.

even as palette options were increasing. "I truly believe that simple images are easier to remember and recognise," she says. "It's a good thing no-one insists on redesigning the stop sign every two years to 'modernise' it!"

A bigger, brighter future

The onset of Mac OS X and Windows XP shifted the goalposts overnight. For years, icons had been tiny works of art, where every pixel counts. The restrictions had given birth to a language and methodology that was ingrained in the minds of designers the world over. Now, there were icons with drop shadows and transparency, and, in the case of Mac OS X, a colossal 128x128 pixel workspace.

Luckily, leading icon designers are well aware of the pitfalls. "There's a danger of treating such icons as miniature pictures," says David Masters, of PyrusMalus. "These might look good, but may not work as effective icons – it's often tricky to decipher the underlying concept." He suggests designers should continue applying the same level of discipline as when working on Mac OS 9 or Windows 2000 icons: the concept should be able to work on those systems, if required, but the results should be rendered with an appearance befitting of modern operating systems.

Gedeon Maheux of The Iconfactory thinks along similar lines: "There are so many more colours and pixels available now that it's tempting to pack in as much detail as possible, and make an icon super-realistic, but this tends to work against good icon design." He illustrates this point using the familiar stop sign: "If traffic signs took the approach of many Mac OS X or Windows XP icons, there'd be more car accidents – if you approached an intersection and the stop sign was a photo of someone's foot stepping on the brake, you'd have to decipher what you were seeing."

He concedes that individual pixels have lost their importance in the age of modern icons: "With 32x32 pixels, there are 1,024 pixels in total; with the advent of Mac OS X's icons, at 128x128 pixels, there are over 16,000 available to the designer. I don't think on a per-pixel basis like I used to – if I did, it would take days to produce each icon!" However, like David Masters, Gedeon states the general goals of icon design remain intact: "A good icon is one that communicates its concept clearly and effectively – it's important that the user understands what the icon is trying to convey without having to think too long or too hard about it."

Despite such sentiments, there's no doubt that modern icons continue to be less iconic in nature, instead tending towards fairly abstract illustrative concepts. "But if such an icon doesn't relate – in concept or message – to what it represents, it fails," claims Gedeon. "Sometimes, an icon based on a company logo is exactly what's needed, but, more often, icons that must be 'learned' through repeated exposure are less effective than ones designed to specifically carry a message." As an example, he cites the Adobe CS icons: "Adobe abandoned familiar logos and symbols associated with its flagship applications to go with generic objects, such as flowers and feathers. It's now difficult for users to know what application these things represent." And, as David Masters says, "If a user has to stop and think about a particular icon then the icon isn't doing a good job."

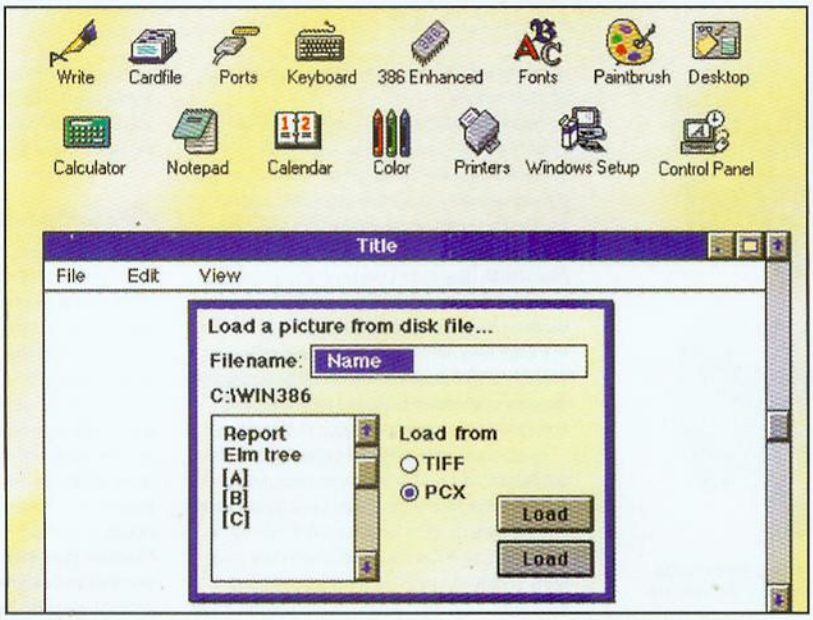
Design by the book

David believes that such icons fail in part due to not adhering to conventions already in place: "Each platform has its own conventions, and it's important to take such conventions into account when creating icons. An icon that contradicts them is likely to confuse the user." Gedeon Maheux, however, argues that each system's guidelines are just that – guidelines. He explains: "They're designed to provide designers with a common language when creating icons that will live in a particular environment. However, it's up to your client to decide how closely they want

More icons from Susan Kare, the designer who created the Happy Mac icon.

Above: "It's important that the user understands what the icon is trying to convey without having to think too long or too hard about it," says The Iconfactory's Gedeon Maheux.

Right: Susan Kare relished the chance to work on Microsoft's Windows 3 icons. The use of colour enabled her to make the icons more physical and 'pressable'.



their icons to conform to such guidelines. It may be paramount to one client and meaningless to another."

David Masters recommends caution when taking such an approach, otherwise icons may look out of place when running on a particular platform: "A Windows XP icon would look out of place on the Mac, and vice versa. Custom-designed icons often have to co-exist with system icons, so it's important they follow guidelines fairly closely." Karla Bakke, also of PyrusMalus, advocates consistency too, especially when working on UI icons: "Occasionally, clients want these to stand out, which isn't the best approach – it's vital to present a set of icons that work well together, rather than seemingly random individual icons. Furthermore, if default icons and standards are revised to fit in with a particular style, this can end up confusing the user."

In terms of icon content, Jon Hicks of Hicksdesign suggests you shouldn't feel constrained by illustrating the purpose of software: "This doesn't necessarily produce useful icons. An icon's purpose is to provide a strong visual identity that's recognisable, even at 16-pixels square – this is why you often see successful icons that use the first letter of the product, such as those for Microsoft and Macromedia products." Icons that encompass too many concepts, he suggests, rarely work: "A Web browser icon could use several symbols to represent it – a globe, a mouse, a monitor – but one angle is better than several."

Gedeon Maheux notes, though, that any more text elements are best avoided: "Icons are usually too small to make effective use of text. The main reason, however, is the global reach of software and the Internet: applying a term to an icon may not work well when that piece of software is brought to another nation with a different language." He continues: "Successful icons don't rely on

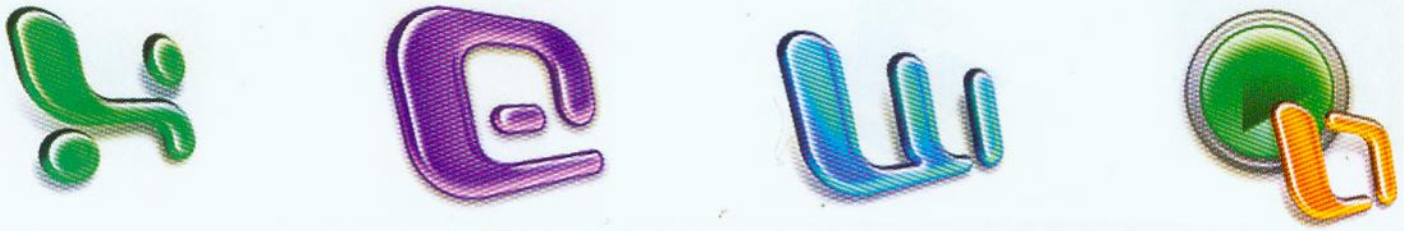
IconBuilder

Various applications enable you to create icons, but the one that has caused the biggest stir is The Iconfactory's *IconBuilder*...

Gedeon Maheux, The Iconfactory's Principal, says the application came about because his team used *Photoshop* for all its image editing – including icon design – and wanted a simple method for creating the final icons. "You used to have to import image data into the likes of ResEdit, create masks, and then finally generate the icon," explains Gedeon. "*IconBuilder* enabled us to continue working on *Photoshop* layers and then composite them for the final build to the Finder."

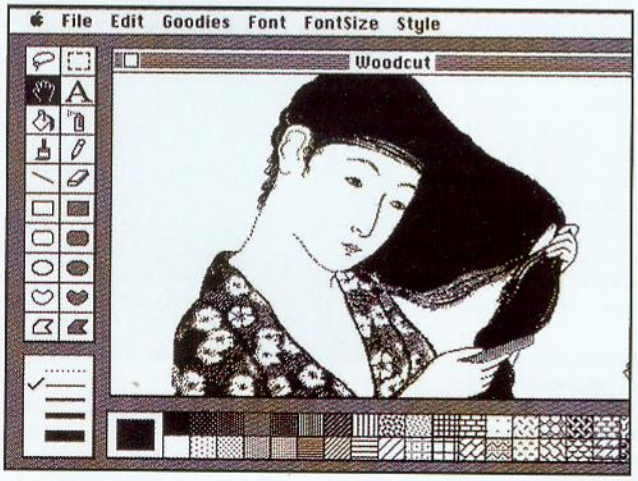
The application enables you to import any desktop icon and apply that icon's data or mask back into *Photoshop* for editing, and convert Mac icons to Windows and vice-versa. Gedeon claims it's perfect for the modern icon designer: "Most designers use *Photoshop*, and *IconBuilder* eliminates the middle man, enabling you to skip intermediate steps and instantly create desktop Mac or Windows icons. In addition, using *Photoshop* layers, you can 'build up' icons from multiple layers by simply turning them on or off and compositing them to run the filter."

Find out more at:
[w] www.iconfactory.com/iconbuilder.asp



Above: "Good designers have a duty to create solutions that are unique and make a product stand out on a cluttered desktop," something apparent in The Iconfactory's work for Microsoft Office for Mac OS X.

Above: The evolution of The Iconfactory's icon for Panic's Transmit highlights the relentless march of technology, with icons increasing in complexity. The company believes that this trend will continue.



Above: Along with designing desktop icons for the Macintosh, Susan Kare worked on the MacPaint interface; many of its tools are now common language within graphic design packages.

words or text to communicate, and that's part of their beauty."

Following guidelines – self-imposed or system ones – is one thing, but making them is something else entirely. The Iconfactory got the opportunity to do this when Microsoft invited the company to create the icons for Windows XP. "We worked with Microsoft's Macintosh Business Unit on *Outlook Express*, back in 1999, and then *Office 2001*," explains Gedeon Maheux. "We were then contacted by the Windows XP team, who requested a new icon style that would integrate seamlessly with the new consumer-oriented look and feel targeted for this major revision to Windows."

Such a project isn't to be taken lightly. The project turnaround was almost nine months: four months defining the design language and another five months for the production cycle. There was also the danger of alienating long-term Windows users, so how did previous Windows icon sets influence The Iconfactory's work? "Actually, other than bringing over some well-established Windows metaphors to help the installed user-base feel at home, we worked with the Microsoft team to create something new," says Gedeon. "We used a more saturated colour palette and a stylised 3D real-object approach to build a friendly environment that appeals to home users."

Some icons are commonplace, but how did it feel to know that the icons that The Iconfactory designed would, for years, be used by many millions of people, and instrumental in their everyday lives? "It's kind of strange. Even after three years, it's still bizarre – but fun – walking into a computer store, looking at the Windows XP desktop, and seeing the Recycle Bin we designed sitting there," says Gedeon. As for the project itself, Gedeon feels satisfied that the brief was met, and that the end result was a success: "Although the project represented a huge design and production challenge, we lived up to it. At the time, it was the largest project of its kind we'd worked on, and we were a little overwhelmed. However, the hard work paid off – and if someone asks what we do, we ask if they've seen Windows XP – most people have!"

Mac to the future

From Susan Kare's revolutionary symbols, through to modern icons designed for Mac OS X and Windows XP, the fundamentals of quality icons design remain the same: a strong visual identity that gets the message across quickly and efficiently. But the march of technology is relentless, and while it's made the past few years exciting times for icon design, where do things go from here? "As flat panel displays increase in size and pack more pixels into smaller spaces, icons will increase in size to compensate," suggests Gedeon Maheux. He also believes that icons will become more dynamic, animating to draw your attention to them when needed, or to convey additional information. "We've seen the beginnings of such things with Mac OS X's open and drop actions on folders," says Jon Hicks. "There's huge potential in this area: no doubt animated icons will become increasingly common as the technology improves and people demand more bells and whistles – although I find it hard to see how this couldn't be anything but irritating."

Susan Kare concurs, reminding us with these final words that icons are one area of design where honing and streamlining are all-important: "Just because you have many colours available, it doesn't make a better icon to use them all. The most important thing is that people can recall icons when they're not looking at them."

Thanks to the following: Gedeon Maheux of The Iconfactory (www.iconfactory.com), PyrusMalus (www.pyrusmalus.com), Susan Kare (www.kare.com), Jon Hicks (www.hicksdesign.co.uk) ca+p

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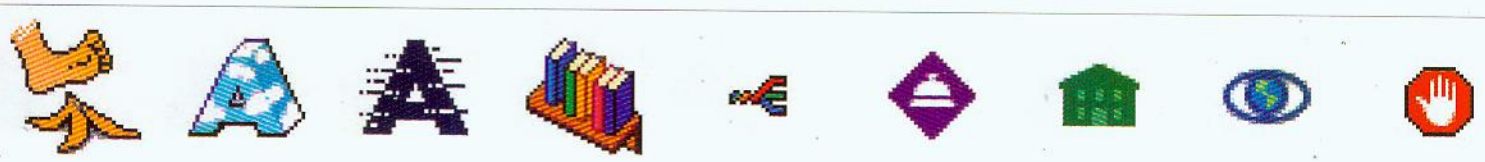


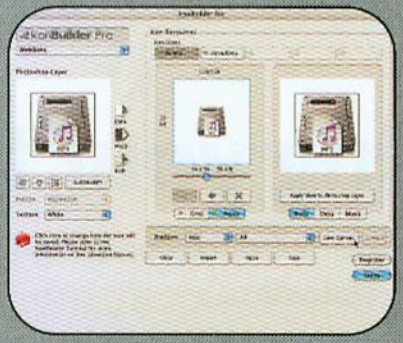
Above: At Microsoft's request, The Iconfactory's work on the Windows XP icons ushered in a more consumer-friendly look, echoing Susan Kare's brief for the original Macintosh icons.

Create an icon in three simple steps

David Masters of PyrusMalus leads you through the process of creating an icon for *iPaste*...

1. We began by drawing concepts on paper, to enable greater experimentation without getting distracted by a particular visual approach. We wanted an icon that represented the action of pasting text in a document. Our designs quickly evolved into a combination of a 'squirty' paste bottle and a scalpel.

2. Mac OS X has very specific guidelines for the perspective of an application icon, and we wanted, in this particular case, to stick closely to the guidelines. *StrataVision* – a 3D software package – enabled us to experiment with camera angles, which we wouldn't have been able to do using a 2D application.



3. Using *Photoshop*, we applied finishing touches to the icon – for example, although the objects' cast-shadows were rendered in 3D, the soft drop-shadows under the pages were added in *Photoshop*. We then tested against different background colours and ensured the icon worked well at different sizes.

Above: The Iconfactory reckons it's useful to set up real-world objects and observe what they look like before rendering Mac OS X icons – something that came in useful when designing the icons for Roxio's *Toast* application.

Above: From original sketch (by Stephen DesRoches) to final icon (by Jon Hicks), the Firefox brand and icon finally provides a Mozilla-based browser with a quality icon.

Illustration: German Olaya [w] www.surstation.lu

Managing your fonts

If your fonts have become troublesome, try packing them away neatly in suitcases…

Fonts are a crucial part of the design process because the whole look and feel of a job can be determined solely by a typeface. As a result, designers tend to have a habit of indiscriminately collecting fonts for use in current or future projects simply because they've seen them used elsewhere, anticipate using them in their own work, or just because they look good.

Stocking up fonts in this manner can, and often does, lead to hundreds of fonts being stored and automatically loaded with the operating system when a computer boots up. This can have a detrimental effect on the performance of your computer because memory is needlessly wasted on fonts that are rarely, if ever, used.

As well as easing system resources, font management software enables you to organise fonts into categories depending on projects, clients or self-defined groups sharing common themes. This improves your chances of quickly finding the right font for new projects.

Ported software

Traditionally, the world of print and typography has been a preserve of the Macintosh platform, but as the PC has become more capable of handling PostScript fonts and graphics programs in general, more and more applications are finding ported versions. Despite this, the PC versions of both *Adobe Type Manager Deluxe* and *Extensis Suitcase* still lag behind their Mac equivalents.

Unfortunately, the current version of *ATM Deluxe* does not support OS X nor are there any current plans for it to do so, although several high-end print applications, such as *InDesign*, have built-in font management features, where fonts can be stored separately from system fonts. This goes some way to relieving the strain on your computer when handling typefaces — it can take care of local problems, although there are still issues to consider when using a network to, for example, make fonts available to other users.

The following tutorial introduces you to *Suitcase* Desktop Edition, the dominant font management software from Extensis, and looks at how to configure the software to optimise your computer's performance and organise your fonts in such a way that finding suitable fonts for new projects becomes a natural process.

PC users should note that their version of *Suitcase* is currently on version 9 while Mac users can enjoy version X1 with full OS X support, which includes numerous benefits such as automated font selection and plug-in support.

Expertise provided by Chris Schmidt. Contact Chris at [e] chris@track5.co.uk or visit the Track 5 Website at [w] www.track5.co.uk.

Top tips for using Suitcase

1 Fonts that you want to manage using *Suitcase* must be removed from the system fonts folder, but remember *not* to remove essential system fonts or you'll experience performance problems. See the help files for your particular platform.

2 If you want *Suitcase* to remember fonts so that you can open or close them again at any time, add them by using the Add Fonts command on the File menu, the Add button on the toolbar, or drag and drop them into the *Suitcase* Fonts pane or Sets pane from the Explorer.

3 If you want *Suitcase* to forget fonts, so that they don't appear in the *Suitcase* Font Database after restart, add them using the Add Temporarily command on the *Suitcase* File menu, or drag and drop them onto the *Suitcase* application icon. Fonts added temporarily are displayed in red type on *Suitcase* font lists.

4 PostScript fonts that are loaded in your printer may appear in applications but will not be displayed in *Suitcase 9*. Some applications' font lists (especially Microsoft apps) show PS fonts that are stored in the printer's memory. These fonts show up in the application's font list even though they have never been added to *Suitcase 9*.

5 To select fonts or sets contiguously, press the Shift key while selecting fonts and/or sets. To select fonts or sets non-contiguously, press the Ctrl (PC) or Alt (Mac) key while selecting them.

6 Fonts opened temporarily are listed in red type. To view a list of these fonts (if any), choose Show Temporary Fonts from the *Suitcase* View menu, or choose Temporary Fonts from the pop-up menu in the *Suitcase* Fonts pane.

7 You can view the current list of closed (deactivated) fonts by choosing Show Closed Fonts from the *Suitcase* View menu, or by choosing Closed Fonts from the pop-up menu in the Fonts pane.

8 To remove sets from the Sets window and the *Suitcase* Fonts Database, select the desired sets, then hold the Shift key while pressing Delete or Remove.

9 Double-clicking a font in either the Sets pane or Fonts pane toggles the font status between inactive and the Default Activation setting chosen.

10 *Suitcase* Network Edition is required to connect to *Suitcase* Server. If you're using *Suitcase* Desktop Edition, you won't be able to connect to it.

Choosing the right software

EXTENSIS SUITCASE DESKTOP EDITION

[w] www.extensis.com

Originally developed for the Mac, the ninth generation of this best-selling font management software has been made available for Windows systems. However, the Mac version, currently on version X1, is more advanced with full OS X support and the ability to automatically activate fonts for all the major print applications, including *Quark* and *InDesign* as well as *FreeHand*, *Illustrator*, *CorelDRAW* and *Microsoft Office*.

EXTENSIS SUITCASE SERVER EDITION

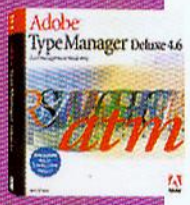
[w] www.extensis.com

This has all the benefits of the desktop version but with the added bonus of allowing fonts to become available across a network. Administrators can control the currency and consistency of fonts to be made available to specific users within the workgroup. Cross-platform compatible for both Mac and Windows users with full OS X support

ADOBE TYPE MANAGER DELUXE

[w] www.adobe.com

This is an old font management favourite with a long history but becoming increasingly out of date. It's currently on v4.6 for Macintosh and 4.1 for Windows, but there is no Mac OS X support and none is planned. Not to be confused with *Adobe Type Manager Light*, which is a simple font utility for viewing and printing PostScript fonts.



FONT RESERVE 3.1

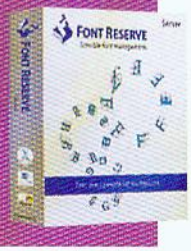
[w] www.extensis.com

Fully featured and powerful font management software with OS X support and various plug-ins available for all the major print applications including *Quark*, *InDesign* and *Illustrator*. A Windows version is now available too, but again, features are limited compared with the Mac equivalent.

FONT RESERVE SERVER 1.6

[w] www.extensis.com

A network server solution to rival *Suitcase* Server Edition. Both the single user and server versions make use of Font Sense, an automated font selection technology that identifies, locates and activates the exact font used in a document. Available across both Mac, Windows and mixed platform networks.



However, the interface and operation of the software are otherwise virtually identical on both platforms.

Automated font selection is definitely something for PC users to look forward to, because this allows individual documents to have fonts automatically associated and activated when opened.

Communal fonts

One feature that both platforms can enjoy with *Suitcase* is the more recent Server Edition, which provides multi-user environments, such as larger design agencies, to have common fonts stored and managed from a central server. The advantages of this are apparent when you consider that without such a feature, each and every computer would need fonts installed and updated individually to ensure consistency throughout a network.

The Server Edition is as simple to use and configure as its desktop equivalent, which is essential when it comes to font management. Such a feature should be intuitive for everyone and present no problems when it comes to installing fonts or detecting conflicts between the typefaces used.

You'll probably need to move non-essential fonts currently stored in your system font folder, because these are automatically controlled by the operating system. They can be stored elsewhere allowing *Suitcase* to retrieve specific combinations of fonts after they have been made available to the software. Refer to the *Suitcase* help files for system fonts that should not be removed for your particular platform.

Once you've done this and have the software installed, you can continue with configuring the software and speeding up your computer and your workflow.

Part 1: Installing fonts with Suitcase

Before you can feel the benefits of font management, you'll need to configure the software to recognise where your fonts are stored...

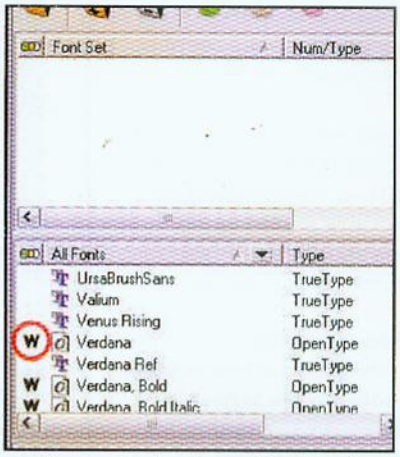
Adding fonts

When adding fonts and viewing a large list of fonts by font name, (as opposed to file name) from a single directory, you may need to wait a moment for the names to be recognised. This is a classic example of how a large quantity of fonts can slow down your system resources while your operating system catches up with your request.

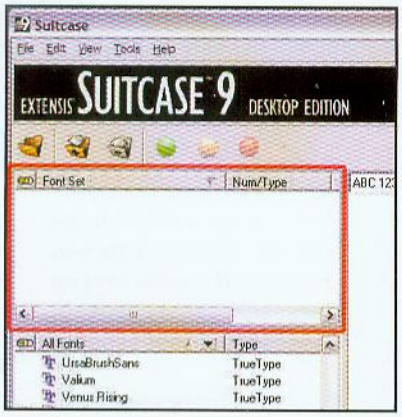
Font Sets

As well as grouping fonts by project, for example, you might want to consider creating stylistic groups matching your own definitions. This is particularly useful when searching for a certain type of font to match a new project. You could simply browse through your 'hand-writing' set, for example, to find something quickly that might be suitable.

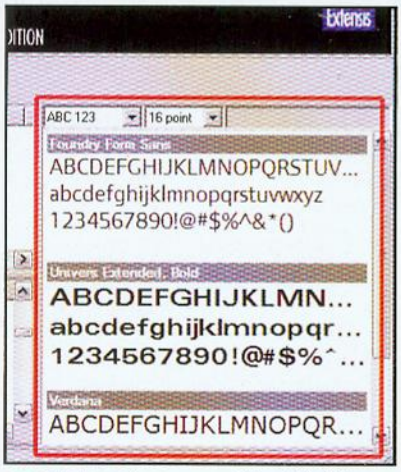
1 If you've followed our top tips on the previous page, you should already have moved your non-system fonts to free up processing resources. To allow *Suitcase* to find these non-essential fonts, simply drag and drop them into the Fonts pane located to the lower left of the *Suitcase* interface.



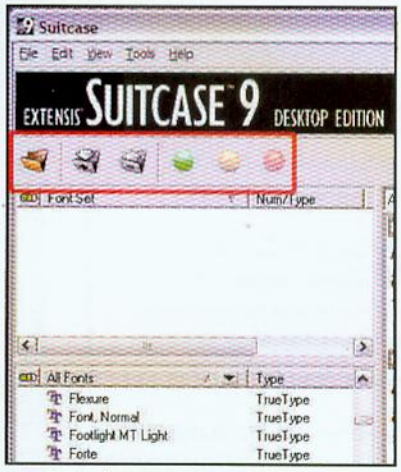
2 If you use the drop-down options above the Fonts pane and select the All Fonts option, you'll see all the fonts listed. The appropriate icon in the status column can identify system fonts.



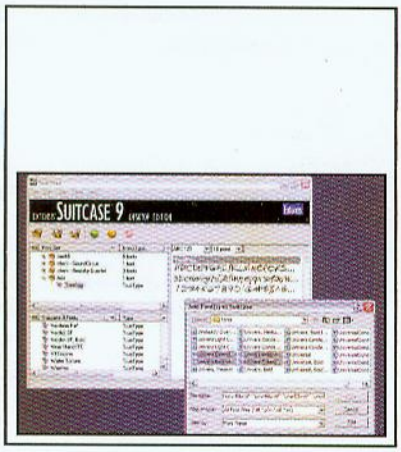
3 The Font Set, or name pane, contained at the top left of the interface allows you to organise your fonts into sets by project or client or whatever else you prefer. Sets can be easily activated or deactivated giving you access to the fonts you need as you need them.



4 The larger Preview pane to the right of the interface provides an area where you can compare fonts side-by-side before you activate them through four different preview modes.

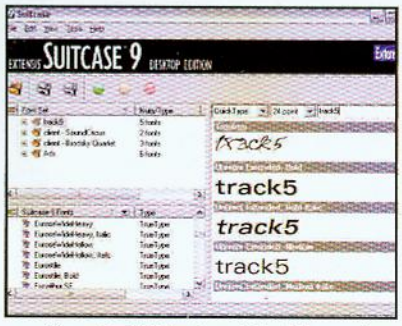


5 The toolbar contains icons for the most commonly used commands. These include creating new sets, the ability to add or remove fonts, and the colour-coded activation modes.

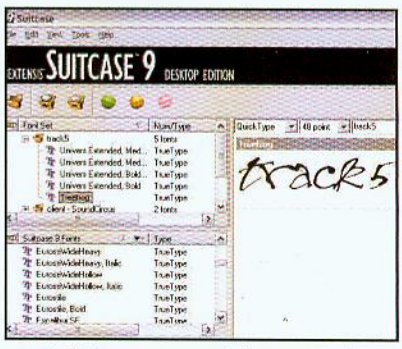


6 To create a new Font Set, click the New Set icon in the toolbar and provide a suitable name for the purpose of your custom set. Add fonts by selecting a Font Set and clicking the Add Font icon to locate the required font.

7 Alternatively, if you've already specified a location where all your fonts have been stored, you can set the Fonts pane to show All Fonts and drag them directly up to the required Font Set.



8 Once a Font Set has been defined, the preview pane displays a summary of the fonts included. You can alter the display mode and point size using the drop-down controls at the head of this, and even enter your own text using the QuickType option.



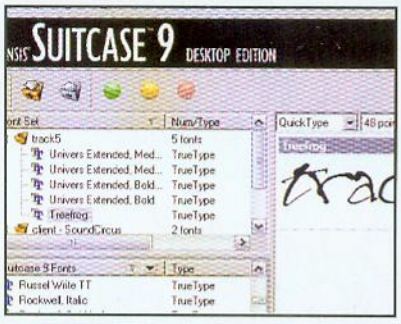
9 Similarly, you can expand the Font Set title to display the individual font names under the group title. From here you can select individual fonts directly for viewing or activating.

Part 2: Managing fonts within Suitcase

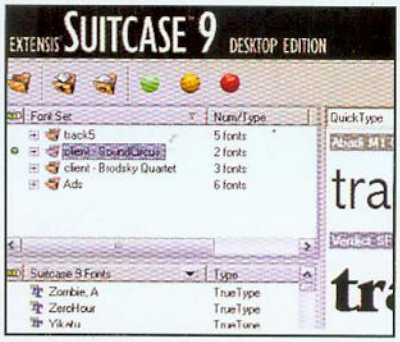
Now you've got Suitcase configured, you need to find out how to make the most of its management features...

Changing status

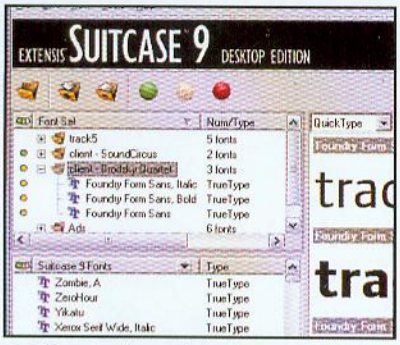
Using the direct approach to change the activation settings of a font will only lead to two default actions: fonts in either permanent or temporary mode can be removed while those unassigned can only be given temporary status. Holding down the Ctrl (Win) or Alt (Mac) keys changes this so that temporary and unassigned fonts can be made permanent while permanent fonts are relegated to temporary status.



1 There's no need to quit applications or restart your computer when activating or deactivating fonts. *Suitcase* allows a font to be in one of three modes through the green, yellow and red buttons contained in the toolbar.

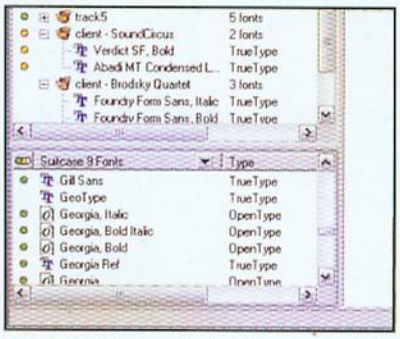


2 The green icon permanently activates fonts, making them available all the time even after a restart. To make a Font Set permanently available, simply select it and click the green icon.

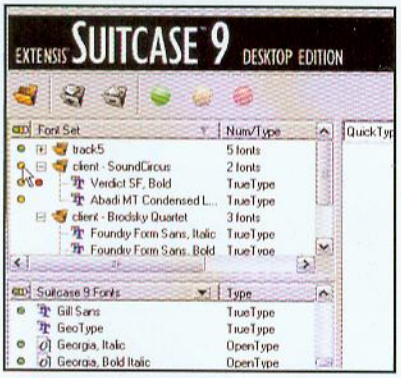


3 The yellow icon assigns a temporary status to a font. When this is associated with a set, the related fonts are made instantly available to your system but will be removed automatically on restart.

4 Meanwhile, the red icon deactivates a font from those currently available. Notice the coloured icon located in the left column of both the Font Set and Font Name panes – this mirrors a Font Set's status.



5 Although we've relocated all non-system fonts to minimise resources, there may well be fonts you would like to have permanently available that need not necessarily be placed within a specific Font Set. The same principle can be applied to individual fonts in the Font Name list directly.



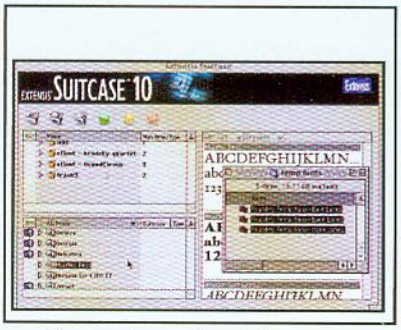
6 A more direct method of changing a font's status can be applied by passing the cursor over the status column. You'll notice the mouse prompts a new status depending on a font's current activation.

Part 3: Mac-specific features

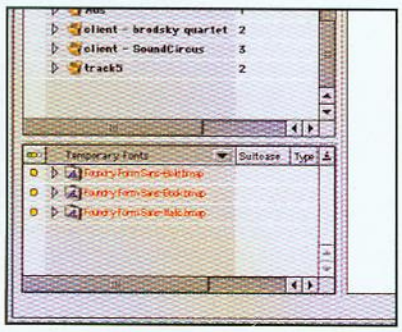
After looking at general cross-platform configuration issues, here are a few features specific to the Mac...

Removing temporary fonts

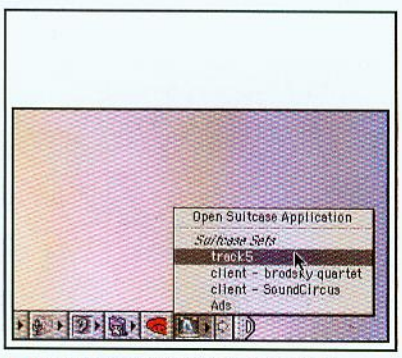
When working with temporary fonts on a Mac, you'll undoubtedly want to remove them when the task has been completed. Simply hit the Cmd-Comma keys to automatically remove any such temporary fonts.



1 If you receive many fonts daily to your Mac, you can use the Activate on Demand feature to add and activate fonts temporarily. Select your fonts and, while holding the Command/Apple key, drag them into the Fonts pane.



2 The newly-activated fonts are displayed in red to indicate their status. *Suitcase* will automatically resolve any font conflicts by allowing these job fonts to override any other fonts with the same name.



3 For more instant results, you can quickly activate and deactivate sets without opening *Suitcase* by using the *Suitcase* Strip on the Apple Control Strip. ca-p